

This is the seventh and the last volume in the Medical Series of the Official History of the Indian Armed Forces in World War II, and describes the activities of the Indian Army Medical Services in the operations that took place in the Eastern Theatre from 1939 to 1945.

The medical history of the campaign in this theatre is unique in that no other campaign could have better illustrated the well-established truth that "health is a battle-winning factor."

In the early stages of this campaign, i.e., in 1942-43, some defects and shortcomings in the medical organisation were noted. These were quickly remedied during the period of preparation for the counter-offensive against the Japanese. When finally the offensive was launched by the Fourteenth Army in 1944, through the highly malarious and unhealthy areas in Burma, the superiority of our health measures and the training and health discipline of our forces as compared to that of the Japanese were amply proved. In fact this medical edge was one of the causes of victory in the field.

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OFFICIAL HISTORY OF THE INDIAN ARMED FORCES
IN THE SECOND WORLD WAR 1939-45

MEDICAL SERVICES

CAMPAIGNS IN THE EASTERN THEATRE

Edited by
B. L. RAINA,
LIEUT.-COLONEL, AMG

Director
BISHESHWAR PRASAD, D. LITT.

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GENERAL PREFACE

The present volume is the seventh and the last of the series dealing with the medical aspects of the activities of the Indian Armed Forces in the Second World War. It is indeed gratifying that a task of such magnitude and complex nature has been brought to completion.

All the seven volumes of this series have been edited by Lt.-Col. B. L. Raina, AMC and prepared by the medical sub-section of the C. I. S. Historical Section under his close guidance and supervision.

Campaigns in the Eastern Theatre is the work of more than one author but mainly of Dr. E. K. K. Pillai, one time narrator in the medical sub-section, who wrote the major portion of it. The sub-section also had the benefit of the advice of Professor F. A. E. Crew, F.R.S. to whom I am greatly indebted for his comments and suggestions.

The Government of India established an organisation before the conclusion of the Second World War to collect material for the writing of the history of operations in which Indian armed forces had participated. This organisation grew into the War Department Historical Section which on the partition of India in 1947 was renamed the Combined Inter-Services Historical Section, India and Pakistan, and was to continue as a joint venture of the two Governments. The Section was asked to produce a history of military operations and organisational activities relating to the Second World War. The Medical Series forms part of the general scheme of 24 volumes being published by the Section.

In the Medical Series an effort has been made to reconcile the requirements of the specialist with the needs of the general reader. The main purpose is to describe the activities of the Indian Army Medical Services during the Second World War.

It is hoped that these volumes would inspire the medical profession to emulate their predecessors and excel their record in the past.

I am grateful to Lieut.-General C. C. Kapila, Director General, Armed Forces Medical Services, for writing a foreword to this volume and to Lieut.-Colonel B. L. Raina, AMC who has edited the volume. My thanks are also due to Mr. P. N. Khera for seeing the book through the Press.

New Delhi,
April, 1964.

BISHESHWAR PRASAD

FOREWORD

This is the last volume in the Medical History Series of the activities of the Indian Armed Forces in World War II, and it deals with the Campaigns in the Eastern Theatre of the War. The earlier volumes have dealt with the administration of the Medical Services, medicine, surgery and allied subjects and the Campaign in the Western Theatre of the Second World War.

The Medical History of the Campaigns in the Eastern Theatre of World War II is unique in that no other campaign could have better provided an example of the well-established truth that "*HEALTH IS A BATTLE-WINNING FACTOR*".

In the early stages of the War, that is, in 1942-43, when the ratio of sick to wounded was 204 and 132 to 1, the decisive influence of disease upon war so often noted in history from Xerxes to Napoleon was repeated. The turn of tide in 1944 and 1945, when the ratio of non-battle to battle casualties came down to 22:1 and 13:1 respectively, proved conclusively the importance of the part played by the Medical Services in preventing sickness and promoting positive health amongst the armed forces.

The rapidly moving pace of military operations—especially during the offensive launched by the Fourteenth Army—required a big medical cover, which it was the responsibility of India to provide. In spite of various difficulties, training and research centres were enlarged and new ones created and the armed forces of India and the Commonwealth countries were afforded all possible relief and aid by the medical services. The shortcomings and defects noted during the days of retreat in 1942-43 were remedied, so that in the later stages of the campaign in 1943-45, the medical organisations were able to render adequate and efficient service. As a matter of fact, the highly malarious and unhealthy areas in Burma were deliberately selected by the Supreme Commander, Admiral the Viscount Mountbatten of Burma, to give battle to the Japanese, relying on the efficiency of our medical services, the superiority of our health measures and the training and health discipline of our forces as compared to that of the enemy. The devoted work and conscientious efforts of the medical organisations to alleviate suffering earned for the medical services the unstinted admiration and affection of soldiers, sailors and airmen of all the Allied forces operating in the Theatre.

This narrative deals with the whole period of the war in the East, and although the aim primarily has been to describe the work of the medical services, a sufficiently detailed account of the operations has also been given in order to provide the background against which the medical work had to be done and also to make the account more easily intelligible to the general reader.

A short account is also given of the medical arrangements in connection with the population movement following the Japanese invasion of Burma. The sudden onset of war, the masses of refugees trekking through inhospitable regions through Burma across the Indo-Burma frontier, the persistent bombing by the Japanese in advance of their land forces and the onset of monsoon, rendered the evacuation of refugees out of Burma into India an extremely difficult problem. To prevent the spread of diseases like cholera, small-pox, diarrhoea, dysentery and malaria in the masses of refugees and the supply of safe water were some of the factors which the medical services had to contend with. The greatest need was the speedy transfer from Burma to India of the largest possible number of refugees and the prevention of diseases amongst them. To this end, arrangements for food, shelter, water and medicine along the difficult and arduous routes had to be carried out in the shortest possible space of time. All these problems were tackled, and although the deaths were estimated to be over 12,000 out of a total of half a million refugees, yet, considering the frightful conditions that had to be faced, it may be stated that the medical services rose to the occasion and played their part creditably.

I may, in the end, express my thanks to Dr. Bisheshwar Prasad, Director, C.I.S. Historical Section, under whose administrative control and guidance the history has been completed, and to Licut.-Colonel B. L. Raina, A.M.C., Chief Collator and Editor of the Medical Series.



(C. C. KAPILA)

Lieut.-General, DGAFMS

New Delhi,
14 April, 1964.

PREFACE

This is the seventh volume in the Medical Series of the Official History of the Indian Armed Forces in the Second World War, 1939-45. The general plan and scope have been indicated in the first volume on *Administration*. The medical aspects of campaigns are covered in two publications. All the events occurring in an area are discussed in one volume. Force K-6 in France, Campaign in Iraq, Syria, Iran, the Middle East, North Africa, Italy and Greece have been discussed in the narrative on *The Campaigns in the Western Theatre*. The present volume records the part played by the Medical Services in Hong Kong, Sarawak, Dutch West Borneo, Malaya, Singapore, Imphal, Kohima, Arakan and Burma.

The medical aspects of any campaign take the form of medical reaction to general operations. Therefore general background is given along with the narrative like physiographical features of the country, general staff picture and military operations. The presentation of account may not appear uniform throughout. An effort has been made to present briefly all available information. This account supplements the accounts presented in medical history series published by the United Kingdom and the Commonwealth countries. The British and Indian accounts covering the same field and based almost on the same material are in many respects identical.

In order to make the medical aspects of campaigns in the Eastern Theatre meaningful reference may be made to some general features.

Japan had been engaged in war with China since 1937 but had failed to achieve her object of establishing "The Greater East Asia Co-prosperity Sphere". From early 1941 Germany had been instigating her to join the Axis and strike against Singapore. The alternative before Japan was to make a hasty retreat from China or strangle China by cutting her supply lines from Indo-China and Burma. She chose the latter course and occupied Indo-China in July 1941, and in December invaded Malaya and bombed Pearl Harbour without any declaration of war. This sudden attack by Japan gave her time and opportunity to overrun Indo-China, Thailand, Malaya, Borneo, Java and Sumatra in quick succession before attacking Burma. Hong Kong was also attacked as was anticipated. Suddenness of the Japanese attack prevented all help from Singapore or Pearl Harbour. The crippling of the Pacific Fleet made it easy for Japan to conquer Hong Kong, Malaya, Borneo, Netherlands, East Indies and Burma. The first round of the war in the East is a tale of defeats and disasters. Retreat from Burma was, however, orderly, inflicted maximum injury on the Japanese and was successfully executed. The loss of Burma brought India face to face with grave danger on her eastern frontier which had never been adequately defended. To drive the Japanese from the periphery of Indian borders India Command had to plan for the reconquest of Burma. The task was stupendous and was not made possible till 1944. Till then limited offensive operations were launched to rehabilitate the morale

of the troops and to hold the Japanese forces in Burma. The Eastern Army was instructed to push south from Chittagong with a view to advance into Arakan to capture air fields on Akyab and to contain a large Japanese force there to prevent it from switching over to the Central Burma front to face the Fourteenth Army. The responsibility for these operations in Arakan lay on the XV Indian Corps. The victories in Arakan bolstered the morale of the Allied forces and raised hopes of final victory in the East.

With the formation of the South-East Asia Command in November 1943 the task of the reconquest of Burma fell on this Command. The India Command was to confine its energies to raising and training of troops for jungle warfare.

The Japanese meanwhile had been planning attack in two sectors—one against Chittagong in the South and the other against Kohima-Imphal in the North. But with the growing power of the Allies and their superiority in the air, Japanese invasion fizzled out and by May and June 1944 they started releasing their grip and retreating back to Burma. In 1944 the campaign in Burma was fought on three fronts—the Arakan where the XV Indian Corps was moving down to Akyab, the Central or Chindwin front where the Fourteenth Army was driving down from Imphal to the Chindwin, and the Northern where the Northern Combat Area Command was driving down from Myitkyina area. These operations were to be followed by 'Dracula', the seaborne attack on Rangoon. The Japanese offered stiff resistance but their lines of communication were intercepted, air power destroyed, and morale shaken; they made a hasty retreat to Thailand and Malaya.

Against this background fighting was carried out in a terrain notorious for ill health and disease. There was considerable wastage of man-power, which could have been avoided if proper planning had been done at the outset of the war. The casualty figures show that the diseases account for more casualties than war wounds—a factor which could easily be avoided if medical services were consulted in time. The notable feature of the casualties particularly in the early stages, is not only that the diseases account for more casualties than war wounds but that majority of them are preventable. The medical services should be consulted from the initial stage of general staff planning. The study of subjects like medical history, medical geography and health intelligence are essential for the success of any operation. The material on health intelligence and medical geography was and is still very limited. The information on physical, social and epidemiological factors is of great importance for preparing medical plans. The rapid evacuation of casualties, especially by air, surgical and medical aid in forward areas, especially provision of blood and plasma, sulpha drugs and penicillin, X-ray, laboratory and mobile surgical units brought the aid to the soldier in the shortest time possible and increased the survival rate. Nursing, dental, neurosurgical, orthopaedic, physiotherapy services made valuable contribution.

The importance of research for the conservation of man-power, provision of adequate care to the sick and wounded and for keeping

them in physically and psychologically fit condition cannot be over emphasised. Protective inoculation of all ranks in all areas against small-pox, typhoid, para-typhoid, and tetanus; and against plague, cholera, yellow fever and typhus in areas where there was risk from these diseases, and control of diseases like malaria and typhus reduced the morbidity and mortality figures.

Difficulties of stores and equipment in emergency can obviously be solved by so developing the industry in normal time that it is able to expand rapidly to meet the demands during emergency.

Building of trained medical man-power including auxiliaries in normal times is likewise essential.

The success in the field of health lies in (i) recognition by administrators, planners and those in authority of the magnitude of impact of medicine on performance of troops and the result of battle; (ii) the rapid extension of services on sound organisational base, advanced planning, training and active research; (iii) education both of troops and those commanding them, supported by regulatory measures. Any regulatory measures solely dependent on discipline without the troops understanding why they are instituted are not likely to give the desired result; (iv) improvisation, adaptability, mobility and cogency; (v) considering calmly the so-called difficulties as problems and ability to solve them.

Despite varied complex problems and unpreparedness all ranks of medical and nursing services as a whole emerged triumphant in the end. The success in any emergency in the future will depend on preparedness and avoiding mistakes committed in the past and in planning ahead.

ACKNOWLEDGEMENTS

The narrative is based largely on data from official records and reports. In some cases the records have been reproduced verbatim or have been paraphrased to suit the requirements of the narrative. Grateful acknowledgement is made to the authors of these records and reports. Maps and graphs have been prepared by the cartography sub-section of CIS Historical Section and the illustrations have been provided by Film and Photo Division of the Ministry of Defence to whom my thanks are due. Valuable help has been given by Dr. E. K. K. Pillai and the staff of Combined Inter-Services Historical Section. I am grateful to Professor F. A. E. Crew who has kindly scrutinised the volume before publication, and to Dr. Bisheshwar Prasad for having vetted it.

I am also thankful to Lieut.-General T. O. Tompson for his kind help, to Shri P. N. Khera for seeing the book through the Press, and to Shri A. R. Nanda for correcting the proofs.

B. L. RAINA

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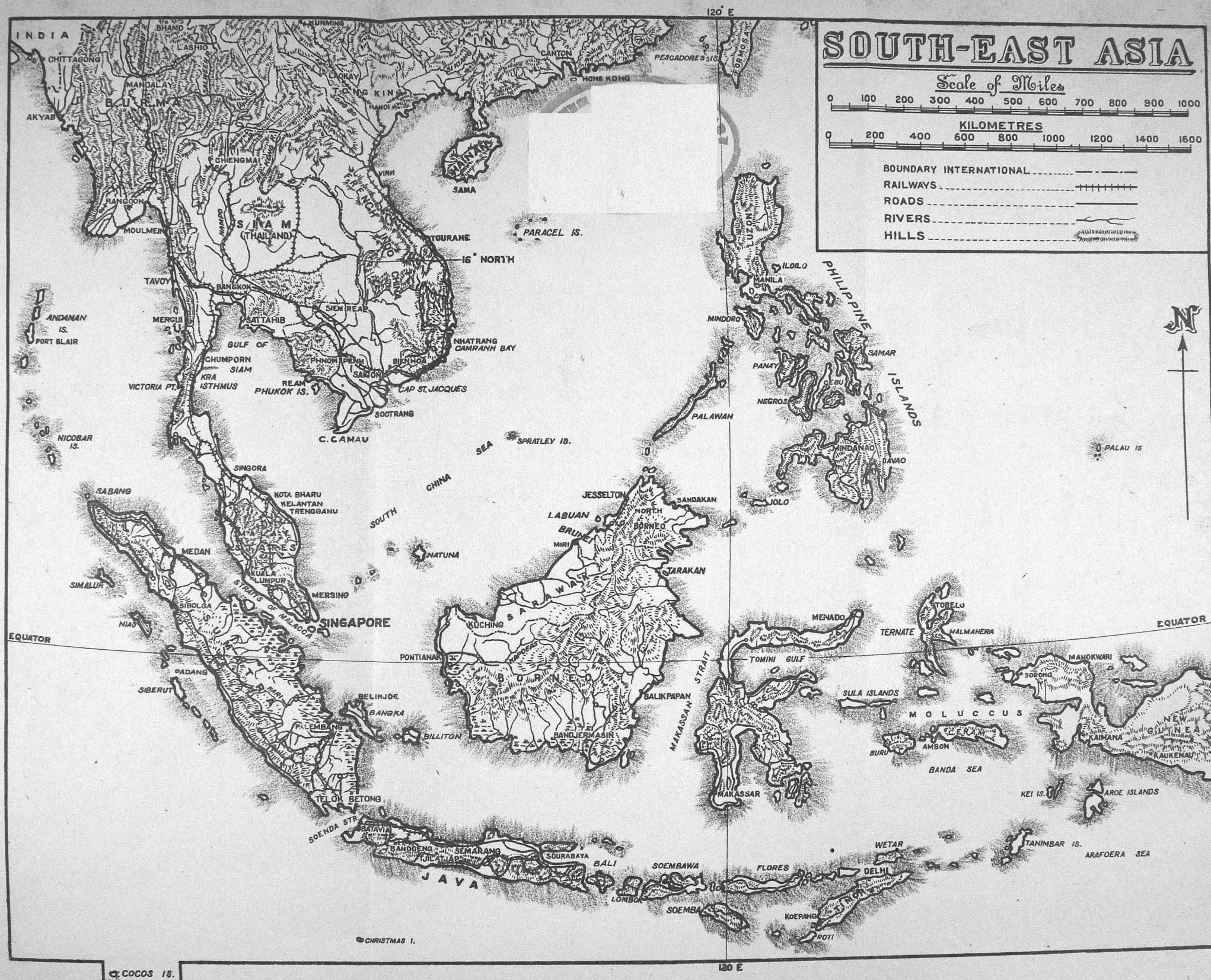
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ABBREVIATIONS

ABRO(M)	. Army in Burma Reserve of Officers (Medical)
AD Corps	.. Army Dental Corps
ADH	. Assistant Director of Hygiene
ADMS	.. Assistant Director Medical Services
ADS	.. Advance Dressing Station
AFS	.. American Field Service
AGH	.. Australian General Hospital
AIF	.. Australian Imperial Force
ALFSEA	.. Allied Land Forces South-East Asia
AMU	.. Anti-Malaria Unit
ARP	.. Air Raid Precautions
AT	.. Animal Transport
AVG	.. American Volunteer Group
BGH	.. British General Hospital
BHC	.. Burma Hospital Corps
BMH	. British Military Hospital
BORs	. British Other Ranks
BSS	.. British Staging Section
BT	.. British Troops
CCS	. Casualty Clearing Station
CGH	.. Combined General Hospital
CMH	. Combined Military Hospital
CMP	.. Civil Medical Practitioner; Central Military Police
CP	.. Command Post; Car Post; Collecting Post
CRO	.. Corps Routine Order
DADH	.. Deputy Assistant Director of Hygiene
DADMS	.. Deputy Assistant Director of Medical Services
DADP	.. Deputy Assistant Director of Pathology
DBP	.. Di-butyl Phthalate
DDH & P	. Deputy Director of Hygiene & Pathology
DDMS	. Deputy Director of Medical Services
DDT	.. Dichlor-diphenyl-trichlorethane
DGIMS	. Director General Indian Medical Services.
DIS(area)	. Detailed Issue and Supply area
DMS	. Director of Medical Services
EA	. East-African
EMNS	.. Emergency Military Nursing Service
ENT	.. Ear, Nose and Throat
ETA	. Expectd time of arrival
FAMO	.. Field Ambulance Medical Officer
FFR	.. Frontier Force Regiment

FMSVF	..	Federated Malay States Volunteer Force
FSD	..	Field Supply Depot
FTU	..	Field Transfusion Unit
GCO	..	Gurkha Commissioned Officer
GORs	..	Gurkha Other Ranks
GR	.	Gurkha Rifles
HKVDC	.	Hong Kong Volunteer Defence Corps
IAMC	..	Indian Army Medical Corps
IAT	..	Inflammation of the Areolar Tissue
ICD	.	Indian Convalescent Depot
IGCH	..	Inspector-General of Civil Hospitals
IGH	.	Indian General Hospital
IMFTU	.	Indian Malaria Forward Treatment Unit
IMH	.	Indian Military Hospital
IMNS	.	Indian Military Nursing Service
IMS	.	Indian Medical Service
IORs	.	Indian Other Ranks
ISS	..	Indian Staging Section
IT	..	Indian Troops
KOSB	.	King's Own Scottish Borderers
KOYLI	..	King's Own Yorkshire Light Infantry
L of C	.	Line of Communication
LRP	.	Long Range Penetration
L/S	..	Light Section
MAC	..	Motor Ambulance Convoy
MAP	.	Medical Aid Post
MAS	..	Motor Ambulance Section
MCDR	..	Motor-Cycle Despatch Rider
MDS	..	Main Dressing Station
MFTU	..	Malaria Forward Treatment Unit
MI Room	..	Medical Inspection Room
MMG	..	Medium Machine Gun
MMH	..	Malay Military Hospital
MS	..	Mile Stone; Medical Services
MSD	..	Medical Stores Department
MSU	..	Mobile Surgical Unit
MT	.	Mechanical Transport
NCAC	.	Northern Combat Area Command
NCOs	..	Non-commissioned Officers
NYD(N)	.	Not Yet Diagnosed (Neuro-psychiatric)
ORs	..	Other Ranks

POW	..	Prisoner of War
PUO	..	Pyrexia of Unknown Origin
PWD	..	Public Works Department
QAIMNS	..	Queen Alexandra's Imperial Military Nursing Service
QM	..	Quartermaster
RAF	..	Royal Air Force
RAMC	..	Royal Army Medical Corps
RAP	.	Regimental Aid Post
RASC	..	Royal Army Service Corps
RCAMC	..	Royal Canadian Army Medical Corps
RHA	.	Royal Horse Artillery
RIASC	.	Royal Indian Army Service Corps
RMO	..	Regimental Medical Officer
RS	.	Regimental Signallers
SAS	..	Sub-Assistant Surgeon
SBs	..	Stretcher-bearers
SEAC	.	South-East Asia Command
SEMO	..	Senior Executive Medical Officer
SMO	..	Senior Medical Officer
SOS	..	Wireless appeal
SSVF	..	Straits Settlement Volunteer Force
TAB	..	Typhoid Anti-Bacteria
TANS	.	Territorial Army Nursing Service
U.K.	..	United Kingdom
USAAF	.	United States Army Air Force
VAD	..	Voluntary Aid Detachment
VCO	..	Viceroy's Commissioned Officer
VD	.	Venereal Disease
WA	..	West-African
WAORs	..	West-African Other Rank
WO	..	Warrant Officer
XRU	..	X-Ray Unit



CHAPTER I

Hong Kong

INTRODUCTION

The Japanese entry into World War II was the culmination of the expansionist policy which that state had followed since the beginning of hostilities with China. In 1931 Japan occupied Manchuria and six years later she was in possession of the five northern provinces of China. Canton was occupied in 1938. The friendly policy adopted by the Western democracies towards China was resented by Japan and it was obvious that her forces would strike in the Far East whenever an opportunity occurred. In 1940 Japan entered into a triple alliance with Italy and Germany. Thereafter Japan's relations with Britain and America deteriorated rapidly in spite of protracted negotiations to arrive at some agreement. On 7/8 December 1941 without any formal declaration of war Japanese forces entered the war by the invasion of Malaya and the bombing of Pearl Harbour. It had long been realised that in the event of hostilities breaking out in this theatre Hong Kong would be threatened, and defence plans had been formulated to hold the invading force until help arrived from Singapore or Pearl Harbour. The suddenness of the Japanese attack precluded any such intervention.

The colony of Hong Kong was ceded by China in various stages. The island itself was ceded in 1841 and the Kowloon Peninsula and Stone Cutters' Island in 1860. The New Territories were obtained on a ninety-nine years' lease from 1898.

TOPOGRAPHY

Terrain

The colony covers an area of 391 sq. miles and commands the entrance to the Pearl or Canton river. The island of Hong Kong has an area of about 32 sq. miles and lies close to the mainland, separated from the Kowloon point on the mainland by a mile of sea, but at Lei U Mun the distance between the island and the mainland is about 500 yards. Less than one-sixth of the size of Singapore this island consists mostly of wooded hill country 500 to 1,500 ft. high and is clearly divided into two sectors, the east and west by the central Wing Nei Chong Gap. A first class north-to-south road runs through this gap. In the north-western corner the Victoria colony sprawls along the coastal plain and lower slopes of Victoria peak and mountains to the east. Between the island and Kowloon lies the Victoria Harbour and the naval base.

The Mainland

The mainland is mostly mountainous except for a broad strip of swamp and irrigated land running south-west from the frontier. The country is mostly uncultivated and consists of a series of steep grassy ridges strewn with granite boulders and intersected by many inlets and

scrub covered valleys. Only two primary roads run through this territory, both starting in the north at Fanling and terminating in the south at Kowloon. The eastern road goes by way of Tai Po and the western road following the coast-line skirting Castle Peak to the west. In between the roads are a number of mule tracks which also run south through narrow mountain passes. All the approaches from the north are dominated by the high ground in the Golden Hill—Smugglers Ridge region in the neck of the peninsula. This neck is completely overlooked by the Tai Mo Shan massif to the north-west and the Needle Hill to the north-east. From the southern tip of this peninsula a railway runs to the frontier and then continues as far as Canton, 90 miles to the north-west. The colony's only aerodrome was situated at Kai Tak east of the Kowloon city.

Climate

Hong Kong has a moderately tropical climate. The hot weather extends for about seven months of the year, and the winter approximately for four to five months. From April to the end of October the maximum temperatures range between 35° and 90°F. During December and January the maximum temperatures are about 60° to 75°F and a minimum from 40° to 60°F with occasional falls to 35°F. There is a well marked rainy season from May to October during which the humidity is very high.

Water

There is a plentiful supply of water all along the mainland from rivulets and streams but is generally muddy and always foul. An elaborate system of storage reservoirs had been developed on the island to ensure an adequate water supply throughout the year. These reservoirs store the rain water and are the only source of water on the island. In the valleys both on the mainland and on the island adequate supplies of underground water exist and could be tapped by tubewells. Shallow wells existed in villages both on the island and on the mainland but the water was never considered safe for drinking.

Major portions of the cities were served by a water carriage system but in other areas pan or bucket latrines were in use whilst in the countryside extensive soil pollution occurred resulting in a high incidence of helminthiasis amongst the indigenous population. Wherever possible farmers collected and removed nightsoil in boats for use as manure. Dry refuse was collected and mainly used for land reclamation in selected areas.

PREVALENT DISEASES

Malaria: There is a moderate degree of malaria which occurs between the months of July and October. Though the peak of the malaria season is during August, September and October, the season really begins in May and extends to December.

Dysentery and Diarrhoea: Where a water carriage sewage system was present there was little dysentery or diarrhoea. In the outskirts of these areas as well as in all villages dysentery and diarrhoea were

rife. The sanitation was virtually non-existent in villages and flies bred freely. Combating this group of diseases proved to be a great preventive problem for the Allied forces. The use of human excreta as a fertiliser also favoured a high incidence of these diseases.

Venereal Diseases: Venereal diseases in Hong Kong were much less than in the cities in the mainland mainly because a certain amount of control was established in the colony. Both syphilis and gonorrhoea were equally prevalent.

Small-pox, Cholera and Enteric group of Fevers: These diseases were endemic in the colony but mostly affected the indigenous population. In areas where sanitary conditions were good and a safe water supply existed, the incidence of these diseases was negligible. In so far as the troops were concerned, these diseases presented no problems as the personnel was fully protected.

Helminthiasis: Owing to the insanitary practice of disposing waste products including faeces on the soil, helminthiasis was extremely common. There was a very high incidence of ascariasis, anklyostomiasis and taeniasis. Schistosomiasis though common in the coastal areas never assumed dangerous proportions. Avoidance of villages for camping sites, filtering and chlorinating water and prohibition of eating raw vegetables were some of the methods enforced to prevent helminthiasis.

THE CIVIL MEDICAL SERVICES

The civil medical services were under the control of a Director of Medical Services and consisted of hospital, health and investigation divisions. The hospital division had a strength of forty-two medical officers and the health division twenty-four. There were several missionary and private owned hospitals in addition to Government hospitals, and in all about 3,000 beds were available. Prior to the outbreak of hostilities steps were taken to maintain close liaison with the military authorities. Recruitment to the St. John Ambulance Brigade and Ambulance Nursing Division was stepped up.

Defence Plans

In view of the extreme vulnerability of the colony and the menacing attitude of the Japanese, plans for the defence of the colony were modified from time to time. The 1937 defence plan was based on a system of redoubts and testified positions on the mainland extending from the head of the Gindrinkers Bay in the west to Tide Cove and thence to Post Shelter in the east. A major bastion was the Shing Mung redoubt at the north-western end of the Smugglers Ridge. The garrison in September 1939 consisted of:—

2nd Royal Scots

1st Middlesex Regiment (machine-gun battalion)

5/7 Rajput Regiment

2/14 Punjab Regiment.

In addition to these regular battalions, local colonial troops and Hong Kong Voluntary Defence Corps (numbering about 5,000) were available. The 1937 defence plan was abandoned after the outbreak

of war as with the limited forces available prolonged resistance on the mainland was not feasible. The new plan involved a delaying action on the mainland to carry out demolitions in Kowloon and then a withdrawal to the island. In November 1941, two Canadian battalions viz. the Winnipeg Grenadiers and the Royal Rifles of Canada arrived in the colony in response to a request by the British Government. With the arrival of these reinforcements it became possible to revert to the 1937 plan. The garrison was grouped into two brigades:—

Mainland Brigade

The 2nd Royal Scots
The 5/7 Rajput Regiment
The 2/14 Punjab Regiment

Island Brigade

The Winnipeg Grenadiers
The Royal Rifles
1st Middlesex

THE ARMY MEDICAL SERVICES CHINA COMMAND

The pre-war organisation consisted of an ADMS attached to Headquarters China Command with a DADH. Under the ADMS were 12 officers of the RAMC, two officers of the IMS and 8 to 12 nursing sisters of the QAIMNS. Two military hospitals were available, one British situated on the island and the other Indian located at Kowloon on the mainland. The hospital in Kowloon which had a bed strength of 120 beds received Indian patients whilst the British Military Hospital on the island had 188 beds.

Medical Cover

The medical services had to fall back on their resources and local civil personnel and equipment to provide field medical units and hospitals, as the defence scheme postulated that the garrison could not expect any replacements or reinforcements. Evacuation from Hong Kong was not considered practicable after the out break of hostilities, and hence it was necessary to plan for holding casualties over a long period. This necessarily involved the mobilisation of adequate quantity of medical and ordnance stores.

The British Military Hospital situated on the Bowen Road was ill-suited for use during the war. Situated at a height of four hundred feet both the hospital and the road leading to it were prominent landmarks when viewed from the mainland. Efforts to obtain alternate accommodation were not successful, but, by the time hostilities commenced, an underground operation theatre and X-ray annexe were constructed. The accommodation was expanded to 400 beds and the hospital was earmarked for the more serious casualties. Additional hospital accommodation for less serious casualties was obtained on the island by requisitioning certain buildings. The accommodation for Indian Military Hospital at Kowloon was wholly unsuitable. A civilian hospital (the Tung Wah East Hospital—300 beds) on the north east

sector of the island was placed at the disposal of the army authorities for use as an Indian Medical Hospital. The bed cover available on the island was adequate but the difficulty that was foreseen was that owing to the very restricted area over which fighting would take place, the available hospitals were all within potentially operational zones.

The Canadian contingent had brought with them four medical officers and two nursing sisters. Earlier eight medical officers (six RAMC and two IMS) had reached Hong Kong. Even with all these additions, valuable as they were, the medical component still remained far too small to meet the demands of an active operational force. Volunteers were called from the civil medical establishments and the response was very encouraging. These medical officers were given short courses of military training and allocated to various hospitals and Hong Kong Voluntary Defence Corps.

A modified field ambulance consisting of a Headquarters and four companies was organised from medical personnel of the Hong Kong Voluntary Defence Corps. One company was attached to the Mainland Brigade and the other three to the Island Brigade. Headquarters was located on the island. Each company was to provide sections to the battalions of the brigade to which it was attached. The ADS on the mainland was to be established in the Indian Military Hospital as soon as hostilities commenced. Evacuation from the mainland would be by ferry boats to the island either to the British Military Hospital or Indian Military Hospital.

On the island one company was located at Wanchai Gap to serve the east sector, another at Wong Nei Chong Gap to cover the central sector and the third at Tytam Gap for the west sector. Since the operational plans envisaged the deployment of troops in numerous pill boxes and strong points, arrangements were made to provide medical aid posts or collecting posts in the vicinity of the more important positions. All evacuations were to be co-ordinated by the Headquarters Field Ambulance located off the Stubbs Road. A hygiene section was also formed and stationed near the Headquarters of the Field Ambulance. With the completion of these organisations some limited training was undertaken.

The general situation began to deteriorate rapidly in the first week of December. It was reported that three Japanese divisions were concentrating about eight miles from the frontier, and on 7 December definite information was received that the Japanese had completed the dispositions of forward troops. All forward demolitions on the mainland were ready and the forward troops had been in position for several days when hostilities broke out on the morning of 8 December. The general dispositions of the troops at the outbreak of hostilities were as follows:

Fortress Headquarters—Victoria City

Mainland Brigade—

Brigade HQ

Sham Shui Po

Forward troops

Det 2/14 Punjab Regt—In the area to the north of Fanling

Troops manning inner line

Left	..	..	..	2 Royal Scots
Centre	..	..	..	2/14 Punjab Regt
Right	..	..	..	5/7 Rajput Regt

Rear troops

No. 1 Coy Hong Kong Volunteer Defence Corps (HKVDC)—Kai Tak aerodrome

Island Brigade

Brigade HQ	Wong, Nei, Chong Cap.
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Troops manning Beach Defences

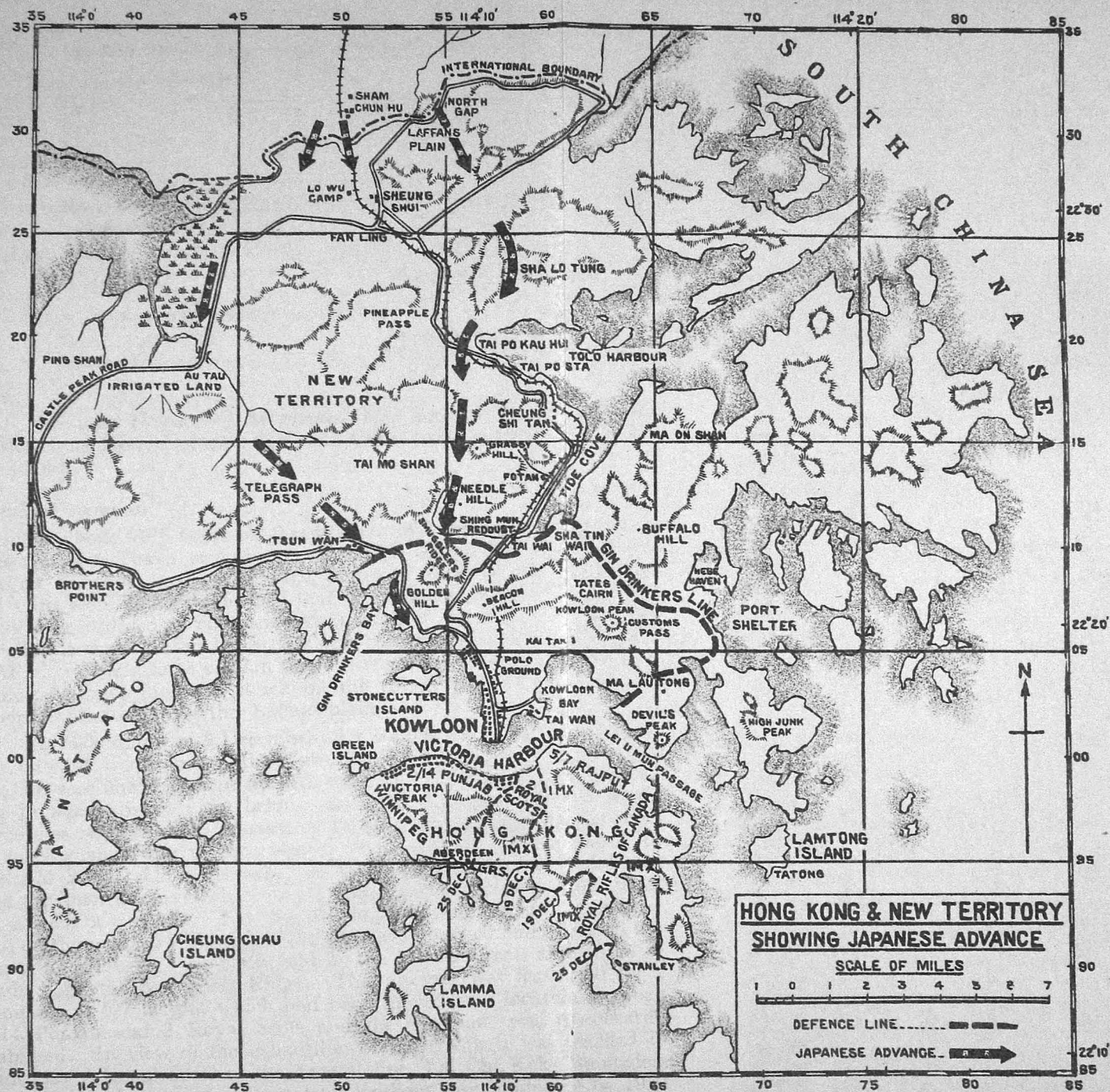
South East sector	Royal Rifles (Canada)
South West sector	Winnipeg Grenadiers (Canada)

Perimeter Defence—1 Middlesex (MG Regt). Other companies of the Hong Kong Volunteer Defence Corps were widely dispersed on the island.

Mainland operations

At about 0445 hours on the morning of 8 December a broadcast message from Tokyo was intercepted which stated that war with the United Kingdom and the United States of America was imminent. All units were at once informed and the forward troops on the mainland were ordered to commence their work of demolitions. Kai Tak aerodrome was attacked by 36 Japanese planes at 0800 hours and a few RAF aircraft and some civilian planes were all destroyed or damaged. Simultaneously, Japanese attack on the colony commenced with the troops infiltrating into the Laffans plain.

At 0900 hours on 8 December after completion of the demolitions, the forward troops began their prearranged withdrawal towards Tai Po, but were unable to cope up with the pressure exerted by the advancing Japanese troops. Just before dawn the following day the whole force was withdrawn to Monastery Ridge. Meanwhile, the Japanese advancing along the western coastal road clashed with a patrol of 2 Royal Scots. On 9 December all the forward troops had withdrawn and the inner line was fully manned, which was expected to hold at least for a week or ten days. This expectation, however, did not materialise, and on the night of 9 December the Japanese attacked and captured the important Shingmyn Redoubt held by the 2 Royal Scots and began to push along the Smugglers Ridge. This attempt was frustrated by a company of 5/7 Rajput which had been moved to a location between 2/14 Punjab and 2 Royal Scots and the situation was temporarily stabilised. In view of the exhaustion of the troops it was decided to withdraw 2 Royal Scots to the general line, Lai Chi Kok—Smugglers Ridge and this move was completed without any hindrance by 1930 hours on 10 December. Meanwhile, during the day (10 December)



troops occupying the middle sector, namely, the 2/14 Punjab, were heavily shelled by the Japanese forces advancing along the Tai Po road, but the line was held virtually intact. On the morning of 11 December the Royal Scots on the left flank were heavily attacked and forced to withdraw. With this reverse the defence line was fast becoming untenable and the possibility of withdrawing the Mainland Brigade to the island was becoming more difficult. It was therefore decided to abandon the mainland and withdraw to the island on the afternoon of 11 December. The withdrawal from the mainland commenced on the evening of 11 December and was carried out without any serious interference from the Japanese forces. A great part of the heavy equipment was withdrawn by the same night. The withdrawal of troops commenced on the night of 11/12 December and was continued throughout 12 December aided by a few brisk rearguard actions. By the morning of the 13 December the mainland had been evacuated.

Medical Cover

On 7 December, a state of emergency was declared and the war-time expansion of the hospitals in the island commenced. The Indian Military Hospital at Kowloon was cleared preparatory to its moving to the mainland. The mobilisation plan, however, could not be completely implemented owing to the sudden outbreak of hostilities and the rapid deterioration in the overall situation. It was within these limitations that the arrangements for evacuation of casualties from the mainland had to be established.

The mainland company of the field ambulance was deployed as follows:—

- | | | |
|--------------------|----|---|
| HQ | .. | .. At the junction of Castle Peak—Taipoo Road |
| 1. Collecting Post | .. | .. Shing Mun Redoubt (to cover Royal Scots) |
| 2. Collecting Post | .. | .. Centre of Gindrinker's Line (to cover 2/14 Punjab) |
| 3. Collecting Post | .. | .. At Clear water Bay (to cover 5/7 Rajput) |

An ADS was established by field ambulance personnel at the junction of east and west roads on the mainland. An improvised casualty clearing station was situated in the Indian Medical Hospital.

When hostilities commenced evacuation proceeded smoothly. Casualties were evacuated from the RAPs to the collecting posts and then to the ADS. They were finally evacuated from the mainland through the Casualty Clearing Station at Kowloon. With the Japanese advance the tempo of evacuation quickened. The walking wounded made their own way back. From the mainland casualties were evacuated by ferry boats to the island. No reliable data on the casualties are available but it is known that 163 wounded and sick were admitted to the British Military Hospital during the period 8 to 13 December. The medical units conformed to the general withdrawal but were fully functioning during this period. All the medical units were withdrawn to the island by the evening of 12 December.

The policy adopted on the island was to reserve the British Military Hospital for all cases requiring surgical intervention. St. Albert's Convent which was converted into a hospital was to receive the less serious cases. A third hospital which was opened at St. Stephens College was to receive convalescents from both these hospitals. By 14 December the Indian Medical Hospital at Tung Wah East had also commenced to function.

The situation began to deteriorate after 13 December. The smooth evacuation of casualties from different sectors of the island by the Hong Kong Volunteer Defence Corps was dependent on the free movement of ambulance cars and telephone communications. Japanese shelling of the islands made evacuation over exposed roads a hazardous operation and it became necessary to restrict evacuation to hours of darkness. Even this became virtually impossible later as the bomb and shell cratered roads presented great difficulties for movement by night.

Island operations

With the conclusion of the mainland operations and the withdrawal to the island where the whole garrison was now concentrated, a reorganisation of the troops and rearrangement of their dispositions became necessary. Roughly the situation on the afternoon of 13 December was as follows:—

2 Royal Scots	.. North-east sector of the island
2/14 Punjab Regt	.. Occupying positions along the Victoria water front and also the high ground to the rear.
5/7 Rajput	.. Reorganising at Tytem
Royal Rifles of Canada and Winnipeg Grenadiers	Original sectors to the south-east and southwards of the island
1 Middlesex Regt	.. Near Leighton Hill

On 15 December the garrison on the island was reorganised into:—

East Brigade

Royal Rifles
5/7 Rajput and attached troops

West Brigade

2nd Royal Scots
Winnipeg Grenadiers

The 1st Middlesex Regiment was placed directly under command of the Force Headquarters. The interbrigade boundary was along the line Tai Hang Village—Wong—Nei Chong reservoir—Violet Hill—Repulse Bay.

Meanwhile, the heavy shelling and bombing of the island which commenced immediately after the Japanese had reached the mainland shore on 13 December continued with increasing fury. The Japanese Commander demanded the surrender of the colony on 13 December and again on the 17th but on both occasions the offer was rejected. The island had by this time a large number of civilian refugees which

considerably increased the difficulties of administration. Fifth columnists and saboteurs were active on the island. The two Indian battalions held the northern coast whilst the Royal Rifles and Winnipeg Grenadiers held the southern coast with 2 Royal Scots in the centre.

On the morning of 18 December, shelling in the north-eastern sector was heavier than usual. Petrol and oil storage tanks were set alight and the shelling continued throughout the whole day. At 2200 hours on 18 December the first Japanese assault troops landed and secured footholds on North Point and Lyemum. Shortly afterwards landings were made at Taikoo docks and Aldrich Bay. The landings were successful and the Japanese were able to achieve considerable infiltration in this area. Battalion Headquarters 5/7 Rajput Regt was forced to withdraw to Taikoo. The fighting continued throughout the night, and by day-break on 19 December the Japanese had captured Jardines Lookout and Mt. Butler and the northern slopes of Mt. Parker. The small force at the North Point was still holding out but it could offer no effective resistance. 5/7 Rajput which had taken the full initial shock of the Japanese assault had suffered heavy casualties and was reduced to almost company strength. The 1st Middlesex now assumed command of this force. By 0930 hours on 19 December the Japanese were advancing along the Wong Nei Chong and Tytam Gaps and the brigade headquarters of West and East Brigades located in this area came under heavy fire. In view of the Japanese pressure the East Brigade, which now consisted of little more than the Royal Rifles, some companies of the Hong Kong Volunteer Defence Corps and the remnants of 5/7 Rajput, was ordered to fall back on Stanley Peninsula and occupy a line along the Stanley Mound.

The Wong Nei Chong Gap was strategically situated in the centre of the island with the lines of communication of the East and West Brigades passing through it. The Japanese in the early hours of 19 December captured the Police Station situated at a prominent knoll within the gap itself. The same day a company of 2/14 Punjab Regt launched an attack and captured some features south of the Caroline Hill, but lacking flank cover found itself in a very exposed position. The position was, however, held until the troops were forced to retire on the afternoon of 21 December. 2/14 Punjab on the north-western sector of the island was ordered to attack east from the positions at Leighton Hill to link up with some troops of the 5/7 Rajput, presumed to be still at the North Point. Caroline Hill on the route of their advance was occupied but further advance was hotly contested and resulted in heavy casualties to 2/14 Punjab. The advance troops, however, succeeded in forcing their way forward but could find no trace of the Rajput company. The attack was, therefore, given up and the troops were withdrawn to the city. Companies from Winnipeg Grenadiers and 2 Royal Scots continued to attack the Police Station but these were unavailing. The Canadian and Indian troops holding isolated positions in the Gap could not be rescued. The north-eastern sector of the island was now completely in the hands of the Japanese with the important Wong Nei Chong Gap. The West Brigade was withdrawn in the early hours of the morning to the eastern slopes of Mt. Nicholson.

By the morning of 20 December, it became clear that following the withdrawal of the East Brigade the Japanese forces had succeeded in driving a wedge between Stanley Peninsula and the western half of the island, thus isolating the two brigades. The Japanese were already in occupation of important positions like Brick Hill, Violet Hill and the Repulse Bay Hotel. Repeated attempts were made by the East Brigade on 20 December to dislodge the Japanese force from these positions but all these failed, and by the evening the Brigade withdrew to its positions on the Stanley Mound. During the night of 20/21 December, the Winnipeg Grenadiers, on the slopes of Mt. Nicholson, were forced back and the Japanese forces reached the Middle Gap. On 21 December, the East Brigade launched a series of attacks aimed at breaking through the Wong Nei Chong Gap via Tytam and linking with the West Brigade. No advance was possible beyond the Tytam cross-roads. During the day a limited advance was also made from the north of Repulse Bay which succeeded in reaching within 300 yards of the Gap Police Station, but this attack was repulsed by the Japanese. This was the last serious attempt made by either Brigade to capture the Gap and from now on the East and West Brigades worked independently.

The battle for Hong Kong was now drawing to a close. The West Brigade was reorganised and the British and Canadian forces on the right flank of the Punjab Regiment were deviated to face south-east in order to link up with the forces in the Wanchai Gap area. There was no further Japanese activity during 21 December. The Wanchai Gap, southern part of Mt. Cameron, Little Hong Kong and Bennets Hill were still held by the Allied troops while Mt. Nicholson, Shouson Hill and Brick Hill were firmly in Japanese hands. The Japanese were pouring reinforcements from the mainland across the sea to the North Point. The night of 21/22 December was comparatively quiet. On 22 December, the East Brigade positions were attacked and the Japanese captured both the Stanley Mound and the Stone Hill in the Stanley Peninsula. During the early hours of 23 December, the Japanese forces cleared Mt. Cameron. On the same day the East Brigade in a last effort succeeded in capturing both the Stanley Mound and the Stone Hill but lost these positions later in the day when the Japanese counter-attacked. The brigade was thereafter withdrawn to a line of small hills due east of West Bay. Severe shelling of these positions occurred during 23 and 24 December but fortunately there was no shortage of food, water or ammunition in the brigade area, and the new positions were held until the evening of 24 December.

On 24 December, the Japanese launched the final offensive from their dominating positions of Mt. Nicholson and Jardines Lookout. Their artillery and mortar fire increased whilst there was intense dive-bombing by aircraft. By first light on 25 December there was considerable infiltration of Japanese troops into the Race Course area. The last bastion of Leighton Hill was captured and communications between the various isolated garrisons on the island became a matter of great difficulty. In the afternoon the Japanese attacks were intensified and the Allied line was being steadily forced back. Wanchai Gap had fallen. A small and resolute band of troops fighting continuously for

days with no reasonable hope of relief and exhausted beyond description now stood between the densely populated central district of Victoria and the Japanese. The military situation had become untenable with difficulty of communications and this coupled with other vital factors such as serious water situation and the impossibility of obtaining further supplies of ammunition from the eastern sector had virtually decided the issue. It was evident that further resistance was no longer justified. At 1515 hours on 23 December the GOC-in-C advised the Governor to this effect and at 1523 hours the Commanding Officers were ordered to cease fire and surrender to the Japanese as soon as opportunity offered. The formal surrender of the garrison took place at the Japanese headquarters in Tai Wang at 1800 hours the same day.

Medical Cover

The medical cover provided on the island has been mentioned earlier but no accurate account of how it functioned during the fighting is possible as records from which such an account might be compiled do not exist. The pattern of fighting was unique in that the whole island was a battlefield and conventional base and L of C areas did not exist. The fighting on the island was, however, unfortunately characterised by gross violations of the Geneva Convention by the Japanese forces. The very rapid development of the fighting, the inevitable siting of the medical units amongst combatant units and the restricted area of fighting may to some extent explain why the conventions were not observed. In the heat of the battle it may have been difficult to recognise a motor ambulance post or a hospital when these buildings were also being used as strong points by combatant troops. But instances of deliberate disregard of conventions were also not few and for these no excuse can be found. However, only a few Japanese soldiers were involved in these and these ceased when Japanese officers appeared on the scene.

The collection and evacuation of casualties could not and did not follow any set pattern as the military situation deteriorated very rapidly. The MAPs were overrun and lost their usefulness in a matter of hours. In the early stages casualties were evacuated to hospitals under arrangements established by the field ambulance, but once heavy fighting and rapid movement ensued the field ambulance became unable to carry out its essential role of evacuating casualties to the hospitals.

The MAP at Wong Nei Chong, where sustained fighting took place, was surrounded by the Japanese. The post was located in concrete huts and the Japanese tried to break open the doors. After 24 hours the staff which consisted of one RAMC officer, three other ranks, and ten Chinese stretcher bearers surrendered. The Chinese were killed on the spot, and the others were beaten. The latter managed to escape but the medical officer was never seen again.

After the Japanese forces had cut through the island, all casualties on the eastern sector were evacuated from the MAPs to the hospital at St. Stephen's College. The HQ Field Ambulance in the Western Sector moved to St. Alberts convent and on 21 December moved to a location near the BMH. As the western sector became increasingly con-

tracted casualties were evacuated to one or other of the improvised hospitals or to the BMH whichever could be reached. These arrangements remained in force until the final surrender. The final withdrawal in the eastern sector exposed the hospital and it was here that the Japanese forces became responsible for killing patients and medical officers and molesting the lady nurses. It was totally inexcusable and was inhuman but the situation was brought under control after twenty-four hours.

An account of the medical services during the stage is found in a diary kept by the OC BMH which was commenced in captivity on 1 June after all the records has been destroyed prior to surrender. It remained safely hidden until Hong Kong was liberated in 1945.

This diary also gives a fairly clear picture of the work of the Army Medical Services during the battle. When the personnel of the nursing detachment of the HKVDC and the members of the St. John's Ambulance Brigade had reported and had been despatched to their various stations the staff of the BMH Bowen Road consisted of:

- 13 officers (9 RAMC, 1 RCAMC, 2 HKVDC, 1 CMP)
- 11 members of the QAIMNS/R and TANS
- 2 members of the Canadian Nursing Service
- 1 civilian
- 2 WOs and 29 ORs RAMC.

Three Japanese houses in Bowen Road, adjacent to the hospital, were taken over for the accommodation and messing of 60 members of the nursing detachment of the HKVDC and two other Japanese houses in McDonnell Road were taken over for the accommodation and messing of the medical officers.

On 9 December, one member of the QAIMNS and three of the QAIMNS/R were sent to St. Albert's Convent, the first to become acting matron of this hospital. On 10 December, ordnance stores were sent to St. Albert's Convent and a beginning was made in the transformation of this place into a hospital.

On the 11th, there was much shelling of the hospital area. One Chinese employee of the hospital was killed and several other Chinese employees were wounded, as was also a sergeant RAMC. The company office, one of the wards and the sisters' quarters were hit. There were no casualties but a number of water pipes were burst.

On 12 December there was heavy dive-bombing and the road to the hospital was blocked by a large crater. It was now arranged that all nursing staff should sleep in the underground shelter. Drivers for motor vehicles were now becoming scarce and from this date onwards it was necessary to employ four to six ORs, RAMC for the drawing of rations, the conveyance of stores and the transport of patients. The ground floor of the hospital was now entirely reserved for the seriously ill and for such as were immobilised by surgical operations. All the windows on this floor on the harbour side were blocked up. The first floor was reserved for acute medical and walking wounded cases, and owing to the frequency of bombardment it became necessary to retain

even such lying cases as could be moved continuously in the shelter throughout the day, taking them back to the wards only at night. The second floor was entirely evacuated. 29 ORs, RAMC proceeded to St. Albert's Convent for duty. Most of these had returned to the BMH from the Indian Military Hospital, Kowloon.

On the 13th, the commanding officer was instructed by HQ to display more prominently the Red Cross emblem over the hospital. This was done but it made no appreciable difference to the number of missiles landing in the vicinity of the hospital.

On the 14th, the stores for St. Stephen's College were transferred and on the following day a small advance party proceeded to Stanley to begin the transformation of the college into a hospital. Upwards of 400 persons—patients, staff and Chinese servants—were now sleeping and spending some portion of the day underground.

On 16 December a Japanese plane made a direct hit upon the hospital kitchen and another upon the officers' mess in McDonnell Road. The sergeants' mess kitchen was enlarged in order to cook for approximately 500 persons. One of the nursing sisters QAIMNS/R was killed by shell-fire in the sisters' quarters of St. Albert's Convent and the acting matron was wounded. 11 ORs, RAMC were despatched for duty at Stanley.

On the 17th, 2 RAMC cooks were despatched for duty to the headquarters of the field ambulance now at St. Stephen's College. Two large bombs were dropped on the Borrett Road producing a crater forty to fifty feet in circumference. That evening there was very heavy rain and an ambulance driver reported to the hospital that he had two seriously wounded patients in an ambulance which had become bogged at the bottom of Borrett Road. 20 SBs proceeded to the place and attempted to carry these patients to the hospital, but owing to the steep gradient and the slippery mud found the task beyond their power. The patients were taken to the Queen Mary Hospital. Early next morning a party from the hospital made the road passable for cars. This was the only occasion throughout the period of hostilities when the hospital was unable to take patients.

After 17 December, owing to the almost constant artillery fire and dive-bombing, it was unsafe to permit patients in any wards except those on the ground floor which were specially protected. Many British patients were transferred to St. Albert's Convent, the Queen Mary Hospital, the University Hospital and the Royal Naval Hospital and many Indian patients to the Tung Wah. From 17 December, therefore, the hospital ceased to function as a general hospital and became a CCS.

On 18 December, the town electricity supply failed and from this date onwards the hospital emergency plant was used. Since its engine had to be rested for six to eight hours in every twenty-four, the theatre staff was given time to rest and to restore order. It is of interest to note that only two cases of gas gangrene were encountered during the whole period under review. Out of a total of 626 surgical operations only one patient developed gas gangrene whilst in hospital. The second case was admitted with a gangrenous condition of the leg.

On 19 December, the hospital was officially informed that the Japanese had landed and that the hospital must be prepared for any eventuality. On this day the Army Medical Stores at Shaukiwan was captured and the forts at Collinson and D'Aguilar were abandoned, the medical staffs of these two forts proceeding to Fort Stanley. The ADS at Tytam Gap and the CP at Windy Gap were also hurriedly evacuated. The staff of the former went to Stanley Fort, that of the latter to St. Stephen's College Hospital for duty. 149 casualties were admitted to St. Stephen's Hospital from the Windy Gap—Tytam areas on this day. The officer commanding the Hong Kong Field Hygiene Section, together with 2 staff sergeants RAMC and 14 Chinese ORs reported at the Bowen Road Hospital and were accommodated there.

On 20 December, there were no less than 53 air-raids and the town supply of water became so erratic that the hospital's own reservoir supply was taken into use for all purposes. Several ORs, RAMC from captured ADSs and CPs and from abandoned ambulances and vehicles found their way to Bowen Road. These additions to the staff were most acceptable as practically all the Chinese employees had now left.

On the 21st, a very ugly and awkward situation developed in the hospital. Numerous stragglers, both British and Indian, invaded the hospital in a state of complete exhaustion and demoralisation. After having been given food and drink the remainder were conveyed to the HQ of the Middlesex Regt. As a result of this incident armed military police was posted for duty in the hospital.

From this time onwards, as the fighting grew nearer to the hospital, great difficulty was experienced in preventing violation of the Geneva Convention by units in the vicinity attempting to use the hospital telephone for tactical purposes.

By the 22nd, the process of transferring patients was becoming increasingly difficult as road communications were extremely uncertain and most of the hospitals were filled to overflowing. As the Bowen Road Hospital was functioning as a CCS, and the transfer of patients was essential to its successful working, it became imperative to find suitable accessible accessory hospital accommodation. The Hong Kong Hotel was taken over and sufficient bedding, equipment and stores to provide for 100 patients was supplied by the BMH. About midday the hospital at Stanley was hit, one shell landing in the operating theatre and killing a RAMC private. Another shell landed outside a ward killing and wounding several of the patients who were being evacuated to another part of the building. The water supply had failed in St. Stephen's Hospital.

On the 23rd, St. Albert's Convent was becoming involved in the fighting. That day no telephonic communication was possible and after nightfall an attempt was made to send through a lorry load of rations, but without success. Between 50 and 60 patients were transferred from St. Stephen's Hospital to the hospital at Stanley Prison.

On 24 December, 18 Chinese ORs of the St. John's Ambulance Brigade and the Hong Kong Field Hygiene Section donned civilian

clothing and left the hospital. As reports were constantly coming in that Chinese personnel attached to British forces were receiving no consideration or protection from their Red Cross emblems no attempt was made to oppose their leaving. By noon St. Stephen's Hospital was holding more than 400 patients. Its water supply was now exhausted and as no help could be given the number of patients in the hospital was reduced to about 280 and the staff to about 60 by transferring these to Stanley Fort and Stanley Prison.

On 25 December, the final day of the battle, all available supplies, both public and private, of intoxicating liquors were destroyed. St. Stephen's College Hospital fell into the hands of the Japanese troops at dawn on Christmas day. Throughout that day, as has been recounted, shocking atrocities were committed in this hospital, and amongst those killed were the officer commanding the hospital, a member of the medical section of the HKVDC, one officer and one sergeant RAMC, three members of the nursing detachment of the HKVDC and all the Chinese members of the St. John's Ambulance Brigade.

On the 26th, the Japanese made no appearance at the Bowen Road BMH, but on the morning of the 27th a Japanese officer accompanied by an officer of the HKVDC (a POW) visited the hospital, asked no questions and gave no instructions. The staff began to clear the debris on the first and second floors and the wards were made habitable so that the pressure on the overcrowded ground floor and air-raid shelters was eased. At Stanley, the Japanese completely vacated the hospital; water and food were scarce but fresh supplies were sent from Stanley Fort on the following day. The evacuation of patients was commenced, British and Canadian being sent to Bowen Road BMH and all light cases being transferred to Stanley Fort.

On the 28th, orders were issued by the Japanese military authorities through HQ China Command for all units to rendezvous at designated places. All RAMC personnel not on the strength of the BMH were instructed to report at Bowen Road. Medical officers were detailed to take medical charge of troops that had been collected at various places. These medical officers later accompanied the troops under their care to the internment camps.

Up to the 29th, very little restriction had been put upon the movements of such as wore the Red Cross emblem, so that the officer commanding the Bowen Road BMH was able to visit all the hospitals in the Colony, collecting information regarding military wounded with a view to their ultimate transfer to Bowen Road. Lorries driven and manned by ORs RAMC went out to the ration dumps, to bring back as much food as possible. This was permitted by the Japanese. Orders were received from HQ China Command that all RAMC and attached personnel surplus to the requirements of the BMH were to go to the POW camp. Ten officers and thirty ORs were instructed so to do.

On the 30th, ADMS China Command and 2 ORs RAMC from HQ China Command joined the hospital. 12 ORs RAMC reached the BMH from Stanley Fort. These were originally on the staff of St.

Stephen's College Hospital. At Stanley Fort, looking after the wounded, not yet fit for internment, were 2 officers and 12 ORs RAMC and one officer AD Corps.

No attempt had been made to take over or to interfere in any way with the administration of the BMH at Bowen Road so far. There was still free movement between the various hospitals and, consequently, it was possible for the officer commanding to compile a list of the medical personnel known to have been killed during the fighting:

- 2 officers RAMC
- 1 officer of the medical section of the HKVDC
- 1 member of the QAIMNS/R
- 16 ORs RAMC
- 3 VADs (nursing detachment of the HKVDC).

With the formal surrender a period of dreary captivity opened up for the survivors of the garrison. Conditions of the POW camps were very bad and rations were by no means adequate or balanced. Medical care of the prisoners was totally lacking and the Japanese appeared to be indifferent to the conditions under which their prisoners lived or to assume any responsibility for providing any medical facilities for the hapless prisoners. The Indian, British and Canadian medical officers, however, managed to provide some sort of medical care for the prisoners with the drugs and stores that they continued to collect. There were in all four camps, one on the island located at North Point and three on the mainland, two situated near the Kai Tak airport and one three miles north of Kowloon. Of these the North Point camp was most unsatisfactory from the point of view of accommodation and sanitation.

In January 1942, all Canadian prisoners were concentrated in this camp after it had been cleaned up. The officers began to be paid and a monthly contribution was levied for purchase of medical supplies. In early 1942 the Japanese began demanding work parties from the prisoners and refused to accept even valid excuse on grounds of ill health for non-compliance. The result was high sick rate for which no adequate medical facilities were provided. An outbreak of diphtheria occurred amongst these prisoners in August 1942 and again no adequate treatment was provided. In all about 500 men were affected, of whom 46 died.

The Indian and British prisoners (ORs) were taken to the Sham Shui Po camp on the mainland, north of Kowloon. The camp was in a very bad state of repair and looters had left the buildings bereft of everything except roof and walls. The onset of winter and absence of blankets made life miserable. The rations consisted of a small quantity of rice, some meat and vegetables. Out of this ration hardly two meals per day could be cooked. The officers' quarters were converted into a hospital which was staffed by medical personnel. The officers were concentrated at the Argyll Street camp near the aerodrome. The camp consisted of a number of wooden huts with concrete floors. It housed about 600 officers, but this number decreased as drafts began to be sent to other countries.

As time passed drafts were detailed to proceed from there to Japan, Formosa and other places where their lot was in no way better. They were required to do mostly manual labour. The diet was very poor and totally inadequate both in quality and quantity. The caloric value was usually low and varied between 1,200 and 1,400 and rarely if ever did it exceed 2,000. It was possible to buy some foodstuffs from the canteen when officers began to receive pay, but after 1943 prices began to soar high and it became difficult to supplement rations. Officers contributed money for purchase of foodstuffs for the men. Red Cross parcels began to arrive in November 1942 and thereafter continued to be received with a certain amount of regularity even in spite of the fact that the Japanese imposed interminable difficulties and delays. These parcels revived morale and as elsewhere made life bearable and survival possible. In April 1943, a bulk of parcels in addition to the usual supply was received and averted a serious incidence of malnutrition.

Medical supplies provided by the Japanese were totally inadequate. They consisted of such simple drugs as iodine, aspirin, sodium bicarbonate and magnesium sulphate. A Japanese medical officer made periodic visits to the camps for transfer of cases which were considered deserving of admission to the BMH on the island. It was the considered opinion of the camp medical officers that these visits did little to alleviate the conditions in the camps.

CHAPTER II

Sarawak and Dutch West Borneo

The island of Borneo occupies a commanding position in the Malaya Archipelago and is strategically important since it covers the approaches to Malaya and Singapore by the South China Sea. The island is about 289,860 sq. miles in area and was divided into four portions politically: British North Borneo, Brunei, a Sultanate under British protection, Sarawak, a large territory (about 50,000 sq. miles) ruled by Rajah Brooke under the aegis of the British and Dutch Borneo which comprised the remaining territory which was the largest portion of the island. The strategical importance of the island was fully recognised by the Allies. But in view of their commitments elsewhere they could only garrison the British Sectors with a token force. This force was entrusted with the task of demolishing the vital oil installations and conduct a fighting withdrawal in the event of a Japanese invasion.

PHYSICAL FEATURES

The coast of Borneo for the most part is rimmed round the low marshy and often swampy land. In places this sector is fringed by long lines of casurina trees, while in the neighbourhood of some river mouths were deep mangrove swamps. The towns and seaports, few in number, are usually to be found at the mouths of the rivers which are not barricaded by sand banks. Inland, the country is mountainous covered with dense jungle interspersed with swamps and rivers. The main mountain range which varies in altitude between 4,000 and 10,000 feet runs in south-westerly direction and forms the boundary of Sarawak state. The whole southward country is corrugated and crinkled in an irregular manner by mountains. The rivers play an important part in providing communications especially in the interior where well developed roads hardly exist. The most important of these in the north-western region are the Sarawak, Batang-Lupar, the Sarebas and the Brupei. The important river in the south-western region is the Kapuas which is navigable for small steamers (draught of four to five feet) for about 300 to 400 miles. In the south, the principal river is the Barito which in its lower reaches traverses a wide marshy area. In this part it is connected with two other rivers viz. Katiayan and Kapisas Murang to the west, all of which are navigable. The important river in the eastern part is Kutie which rising in the central mountains takes a sinuous course and reaches the seas in the region of the straits or Maccassar. The mineral wealth of Borneo is great and varied. The main items are oil and gold though diamonds, mercury, copper and other minerals also exist. Considerable progress has been made in the development of oilfields in Dutch Borneo, and extensive oil fields exist in Balikpapan and Sanga Sanga.

CLIMATE

The climate of Borneo is hot and damp as could be expected from its equatorial position, though in some parts of the interior and on the

hills it may be said to be temperate. Around the coast and in the low lying marshy areas in the interior the climate is hot and humid and is at times oppressive. Temperatures remain fairly constant throughout the year, the average being 84°F by day and 72°F by night. The extreme limits are usually in the nature of 96°F maximum and 70°F minimum. The annual rainfall is about 150 inches and most rain falls between November and May. Though days of continuous downpour are rare comparatively few days pass without a shower. Squalls of wind are frequent and violent during the rainy season and usually precede a downpour.

PEOPLE

The people inhabiting the island belong to different races. The most important indigenous races are the Dyaks, the Dusuns, and the Muruts of the interior. The Dutch and Arabs are politically important in Dutch Borneo whilst the British communities have similar importance in Sarawak and British North Borneo. In addition, there is an Indian community distributed mostly in the British area. Throughout these areas living conditions were very nearly primitive. Majority of the population lived along the sea coast or along the river banks whilst small tribes led a nomadic life in the interior. In large urban areas a certain amount of sanitation existed but in rural areas it was non-existent. Houses were usually built of wood on piles over stream banks and were frequently overcrowded. In prewar years an attempt was made to introduce bore-hole latrines in the villages but did not meet with any appreciable success. Rice, sago and tapioca and vegetables were the staple items of food. Salt fish, pork and deer meat were taken occasionally. Agriculture was primitive and just enough for the needs of the population.

WATER SUPPLY

Water supply in Sarawak and North Borneo was on the whole unsatisfactory. Water for domestic purposes was collected from rivers, springs, and shallow surface wells, or rain water collected in shallow basins. Except in a few urban areas no protected central water supply existed. In the Kuching Camp, however, water supply was satisfactory and was derived from the Matang reservoir about ten miles to the north of Kuching wherefrom the water was conveyed to the camp by pipes.

PREVALENT DISEASES

Reliable statistics on prevalent diseases are not available. Information from various sources even when they were governmental were conflicting. Malaria, dysentery, venereal diseases, dengue and typhus fever were of great importance. Small-pox and chicken-pox were prevalent. Other common diseases were tuberculosis, filariasis, yaws, leprosy etc. Dengue fever was fairly common amongst new arrivals. Endemic goitre was common in northern areas. Beriberi was reported to be responsible for many deaths annually and was attributed to the use of polished rice.

Malaria: Malaria was the most important problem for the medical service. It was very common in Sarawak, Brunei and North Borneo. The maximum incidence was during the months of July-October. Splenic rates varied from 2 per cent. to 70 per cent. The high incidence was due to the abundance of swamps, small streams, and rice fields with stagnant water and natural collections of rain water which afford ample breeding places for mosquitoes. The chief vector was *Anopheles sundaicus*. In important urban areas, and in some villages, attempts were being made to institute anti-malarial measures which met with some success. In so far as the armed forces were concerned anti-malarial measures were enforced in the Batu Lintang area and all breeding places were eradicated. Strict personal protection was enforced. Consequently the incidence of malaria amongst the troops was negligible.

Dysentery: Both amoebic and bacillary dysenteries were common. The use of human excrement as fertiliser for vegetable farming, the insanitary disposal of sewage and the lack of safe water supply were all contributory causes.

Enteric Group of Fevers: The incidence of enteric group of fevers was low according to statistical returns, but evidently a large number of cases were not being diagnosed and many deaths in such returns as labelled being due to diarrhoea, might actually have been caused by enteric fevers.

Helminthiasis: Infections with various worms were common and in some coastal villages it was estimated that 100 per cent. of the children were infected. Ascariasis was the most prevalent type of infection and accounted for more than 80 per cent. of the cases.

Venereal diseases: Gonorrhoea was the most prevalent venereal disease in the area and syphilis though common was of recent origin and was supposed to have been imported by the Chinese labourers. Gonorrhoea accounted for about 80 per cent. of cases. Other venereal diseases like chancroid and lymphogranuloma venereum were not uncommon. Both Kuching and Miri abounded in brothels over which no control was exercised. The incidence of venereal disease in the troops was, however, negligible. The repeated educative lectures on venereal disease, and insistence on individual protection in case of exposure might have been the factors contributing to this low incidence.

Typhus Fever: Scrub typhus was occasionally reported from Brunei. The other regions were comparatively free. Louse borne typhus was reported to be not prevalent.

APPRECIATIONS AND PLANS

The outbreak of World War II in September 1939 found the Allies without a definite plan for the defence of their possessions in the Far East. The collapse of France left Britain alone in the Far East, the Dutch being still non-belligerent. In October 1940, a conference was held in Singapore to co-ordinate the employment of American,

British and Dutch forces in the event of war with Japan. The British were to provide adequate ground defence for their possessions and suitable air cover for the region whilst the Dutch were to be responsible for the defence of their territories. It was originally estimated that even to discharge these tasks in the British sector of Borneo a force of one brigade adequately trained and well equipped with a liberal supply of auxiliary units would be necessary. Owing to the extensive commitments of the Allies, even this minimum could not be made available for the defence of Borneo, and in so far as air cover was concerned no aircraft could be spared when eventually the Japanese attack commenced.

The account of the campaign in Borneo centres round one Indian Army battalion, namely 2/15 Punjab, and a few units of the auxiliary services. This battalion arrived in Singapore in the first week of November 1940 from India. The battalion was detailed to send detachments (amounting to a company) to Miri and Kuching in Sarawak in December 1940. One detachment of 'C' Coy consisting of two officers and ninety-eight other ranks landed in Miri on 23 December 1940 and another detachment of the same company (one officer and fifty-two other ranks) landed in Kuching on the following day. The main function of the Miri detachment was to cover the demolition of the oil installations in the Miri-Lutong-Seria area. Later on this detachment was entrusted with the task of training Brunei State Forces. The Kuching detachment was entrusted with the task of protecting the civil demolition parties engaged in the task of demolishing the vital airfield five miles to the south of Kuching. Towards the end of March 1941 it was decided to garrison Sarawak with 2/15 Punjab. On 9/10 May 1941, the battalion, less one coy, embarked in Singapore and arrived in Kuching three days later. 'B' Coy was sent to Miri for relief of the detachment there whilst the rest of the battalion moved into tented accommodation at Batu Littang. The force on the island then numbered 1,075 all ranks and this together with the State Forces and other auxiliary troops was designated as 'Sarfor'.

An extensive reconnaissance of the Kuching and Miri areas was soon undertaken and defence plans were formulated. In view of the limited forces available and the topography of the country a scheme for mobile defence was drawn up. This plan known as 'Plan A' envisaged the prevention of Japanese advance until the demolition plans were carried out and holding the airfield at Kuching as long as possible. Later, if the Japanese could not be halted the force was to be withdrawn in small groups with a view to employing them in guerilla roles.

The role of Sarfor was to be as follows: The Sarawak Coastal Marine Service was to maintain a close watch on the coast-line and prevent infiltration. They were provided with motor launches. 2/15 Punjab, the main fighting force, was organised into five companies of three platoons each and the HQ Coy was organised into nine platoons. Sarawak Rangers were allotted the task of harassing the Japanese in the mangrove coastal belt. On completion of this task the formation was to assist in the protection of lines of communication. This plan made economical use of the limited forces available to the maximum advantage.

MEDICAL SERVICES

The advance party of 2/15 Punjab was accompanied by one Sub-Assistant Surgeon and three nursing orderlies. No other medical personnel or detachments of medical units were sent as the strength of the detachment was very small. Hence all patients requiring hospitalisation had to be evacuated to civil hospitals. Fortunately in the stations in which the troops were located there were fairly well equipped civil hospitals. The health services of Sarawak maintained a hospital at Kuching located about a mile from the centre of the town. This hospital had a bed strength of 300 and possessed two modern operating theatres, a well equipped X-ray department and a pathological laboratory. The hospital at Miri was run by the Oil Company and was equally well-equipped. The civilian authorities gave their full co-operation in the reception and treatment of army personnel.

The main body of the battalion accompanied by a regimental medical officer arrived in Kuching on 12 May 1941. The battalion was located in the Batu Latang area where a small aid post was opened. Patients requiring hospitalisation were transferred as usual to the civil hospitals. These medical arrangements remained in force until the outbreak of hostilities.

Since the plan envisaged a mobile defence it was decided that each particular area in which the mobile bands were operating should have an aid post. Casualties were to be evacuated to a central hospital by ambulance launches and motor ambulance. This involved a considerable increase in the medical staff and the allocation of a hospital and a field ambulance. These matters were placed before Headquarters Malaya Command but the medical reinforcements actually received were too little and too late; a feature characteristic of this stage of the war.

CHANGE IN THE DEFENCE PLAN

Owing to the paucity of reinforcements of troops and the doubtful nature of air and naval support in the event of hostilities breaking out there was a growing scepticism about the chances of success of Plan A. A conference was held in September 1941 at Kuching between the British and the Dutch officers when some doubts were expressed as to the feasibility of holding Kuching with the limited forces available against a full scale onslaught by the Japanese. The representative of Sarawak Government insisted that either reinforcements should be sent to Sarawak or all Allied troops should be withdrawn. In view of the fact that reinforcements were quite unlikely and that in all probability the State Forces might be ordered not to co-operate in the event of outbreak of hostilities, an alternative plan had to be considered.

The fresh plan, 'Plan B', differed materially from the previous plan as it was based on static defence. All troops and stores were to be concentrated within the three and a half mile perimeter of the aerodrome and no serious effort was to be made to halt the Japanese advance north of Kuching. The main aim of the revised plan was to deny the

Japanese any aerodrome facilities either in Sarawak or Dutch Borneo. Even in spite of the inherent defects and limitations of the plan, it was approved since any elaborate defence of the island was not feasible without considerable reinforcements which were not forthcoming.

OPERATIONS

According to this plan all stores of food, ammunitions and petrol were brought within the perimeter of the aerodrome, and defence works were undertaken and pushed forward at a feverish pace. The important oilfields at Miri and Seria were virtually impossible to defend owing to the paucity of troops. They were about thirty-two miles apart and road communications between them were extremely difficult. On the morning of 8 December, orders were received for the destruction of all oilfields and installations and by the evening of the same day the task had been successfully accomplished in Miri. The following day the Miri landing ground was rendered unusable for aircraft. In Seria all necessary demolitions were carried out on 9 December. By 13 December, their tasks successfully accomplished, all personnel were assembled at Miri. They were evacuated to Kuching on the following day. The party was evacuated in three ships which were attacked by Japanese aircraft and a few casualties resulted including the OC troops who was fatally wounded.

At 0330 hours on 16 December, the Japanese landed at Seria, after an aerial reconnaissance of the area. The landings were unopposed and the Japanese took over the demolished oilfields. The first Japanese action in the Kuching area occurred on 19 December when about fifteen bombers raided the town and aerodrome. Little damage was caused to the aerodrome but in the town over 80 inhabitants were wounded and 25 killed.¹

¹ On 22 December 'Sarfor' was disposed of as follows:—

2/15 *Punjab Regt.*

Bn HQ—

B Coy—

C Coy—

D Coy—

E Coy—

HQ Coy—

(less one pl at Bukit Soil) at Pending under orders to withdraw to the western perimeter or the aerodrome when attacked.

Along the NE perimeter of the aerodrome.

(less one pl north of the Matang road)—along the north perimeter of the aerodrome.

along the south perimeter of the aerodrome.

in the SW perimeter area of the aerodrome.

Gunboat pl. Prepared to operate with SCMS and Sarawak Rangers in providing information and harassing the enemy within the network of rivers north of KUCHING.

18 *pdr* and 3" *mortar detachments.* at Rg Biawak and Bintawa. Also two three inch mortars at Pending and two in reserve.

Carriers. One section at Pending and the remainder inside the aerodrome defences.

Sub Machine Gun Pl. One section at Bt Siol: two sections at Pending: the remainder at the aerodrome.

Located 700 yards north-west of Batu Lintang Camp.

These were working in close conjunction with the Punjabi Gunboat pl north of Kuching. Their main role—coastal patrol work and observation.

Mobilised and ready to move to battle stations within the aerodrome defences.

(Contd. on next page)

Force HQ—
SCMS and SARAWAK
Rangers

SAF & SVF

On 23 December at 2000 hours, a message was received from Headquarters Malaya Command to demolish the aerodrome at Kuching forthwith. These instructions clearly indicated that there was no intention to use the aerodrome as an advance operational base. Since the landing ground was to be demolished there was no point in committing troops to defend it, and permission was obtained from GHQ Malaya for the troops to withdraw into Dutch West Borneo after the demolitions were carried out.

By 0900 hours on 24 December, the demolitions were completed. About this time forward posts reported that the Japanese landings from landing craft had begun. The forward gunboat platoons fought a rear-guard action to Lintang and thence up the river Kuap to Pending. Kuching was occupied by the Japanese during the same afternoon and 'A' Coy withdrew to the aerodrome as originally planned. The Japanese forces followed up and established contact with the defenders of the aerodrome by the same evening.

The occupation of Kuching threatened to cut off Pending and Siol and the troops in these areas were instructed to fall back to the aerodrome. The detachment from Pending managed to retire to the aerodrome but the troops retiring from Siol were ambushed and all but three were either killed or captured. By the morning of 25 December it was evident that the Japanese were on the south and south-eastern flanks endeavouring to cut off any withdrawal to Batu Kitang. The survivors of A Coy were despatched to hold the vital ferry crossing at the junction of the river Sarawak and river Kiri at Batu Kitang.

Shortly after midday on 25 December, reports were received that heavy firing was heard from the Batu Kitang direction. It thus appeared that the Japanese had already reached the withdrawal route and orders for an immediate withdrawal were issued at 1445 hours. Headquarters D and E Coys commenced withdrawing at 1530 hours and reached Batu Kitang after minor brushes with the Japanese but 'B' and 'C' Coys forming the rearguard were heavily attacked by the Japanese who were now aware of the intentions of the Sarfor. Of these companies one platoon (B Coy) alone succeeded in rejoining the main body and the rest comprising four officers, 6 VCOs and 230 IORs were either captured or killed.

At Batu Kitang only a few vehicles could be ferried across as the ferry got out of order. Crossing continued in the small native *parhus* (boats) and some swam across the river. This was a slow and tedious

Footnote (Contd)

By 1200 hours on 24 December troops were located as follows:—

2/15 Punjab Regt

A Coy, less one platoon Pending one Pl, A Coy Bukit Siol

B Coy, C Coy, less one pl, D Coy less one pl, E Coy aerodrome.

One pl C Coy withdrawing on orders from Tanjong Umbang

One pl D Coy 10 MS Penrisan Road

Bn HQ, SMG, and Admin pl—Aerodrome.

Sig Pl, 18 pr pl, less one section and crew casualties.

3" mortar pl, less two mortars and crew casualties, carrier, pl, MT Pl, in position vide plan "B" Gunboat pl, had withdrawn to Platoon HQ Pending.

Det IGH and Hospital—8 MS Penrisan Road

task but by 1900 hours the main body of the troops had crossed the river, after destroying the vehicles left on the east bank of the river. The Japanese soon after launched a severe attack on the covering force and cut off their line of retreat. This force consisting of one officer and 180 men, however, managed to elude and escaped south to Landen and after a gruelling march of some 60 miles through dense jungle re-joined the main body at Singkawan II on 31 December.

Meanwhile, the main force after a short halt in Siniawan proceeded to Bau and thence to Krokong which was reached on the morning of 26 December. On arrival at Krokong the remaining MT and heavy weapons were destroyed. Sarfor ceased to exist on this day when all Sarawak nationals were released except a few volunteers and 2/15 Punjab—now about 800 strong—carried on alone for the rest of the campaign. The village of Dujoh was reached by 1300 hours and by the evening the troops reached Sarabik. The track had been fairly good from Krokong affording a well covered line of withdrawal first passing through cultivated areas and later through jungles. By the morning of 27 December the troops had crossed into north-west Borneo.

MEDICAL COVER

The medical arrangements detailed earlier continued to be in force until the outbreak of hostilities. Casualties requiring hospitalisation were evacuated to civil hospitals. The sick and hospitalisation rates were within limits.

A staff officer (medical) from Headquarters Malaya Command visited Sarawak in August 1941 to discuss the medical arrangements and make recommendations for improving the same. As a result of his visit and subsequent recommendations it was promised that a section of an IGH would be sent. It was also recommended that certain stores and equipment might be moved to a large house in the Siniawan area which was equipped with electric lights and sanitary fittings with a view to ultimately locating the IGH in that area. Site for the location of a field ambulance was also selected but this unit never arrived. In addition, 200 local Chinese were employed on stretcher bearer duties.

With the change of the plan of defence it was decided that the Section IGH when made available, should be located in the aerodrome area, where the main body of the force would be concentrated. Accordingly the previous arrangements were scrapped and plans were made to locate the hospital on the Serian-Kuching road. Section 19 IGH arrived from Malaya on 11 December 1941 and was initially accommodated in the civil hospital at Kuching. The strength of the hospital was two officers, three Sub Assistant Surgeons and thirty-nine Indian Other Ranks. The hospital moved to its site in the aerodrome area on 23 December. The building at the new site consisted of an operation theatre, store rooms, accommodation for 110 patients, the latter being entirely accommodated in tents. Before the hostilities commenced troops were accommodated in *Attap* huts. These huts had electric lights and fans. Proper drainage facilities were available and mosquito

breeding places hardly existed but scant attention had been paid to dispersion.

On the outbreak of hostilities, medical aid posts were established at 'B' Coy area in Pending, Astana steps, and Bukit Soil. There were heavy casualties among the personnel manning these posts. The Chinese stretcher bearers allotted to different points to convey casualties from these positions promptly fled into the jungles when the hostilities commenced leaving the few military medical personnel virtually 'holding the baby'. On the morning of 24 December when the Japanese advance commenced, owing to absence of any mode of conveyance no casualties could reach the IGH. On the morning of 25 December, a solitary walking wounded casualty arrived. About this time instructions were received from the Officer Commanding troops to close down and move forthwith to Bau with as much equipment and personnel as possible. This was complied with, but the move was rather difficult owing to the then existing confusion. About 1830 hours the same day the hospital arrived in Bau and opened up in a Chinese school. At 2200 hours orders were received from the Force Headquarters for the hospital to move with as much equipment as possible towards the Dutch border.

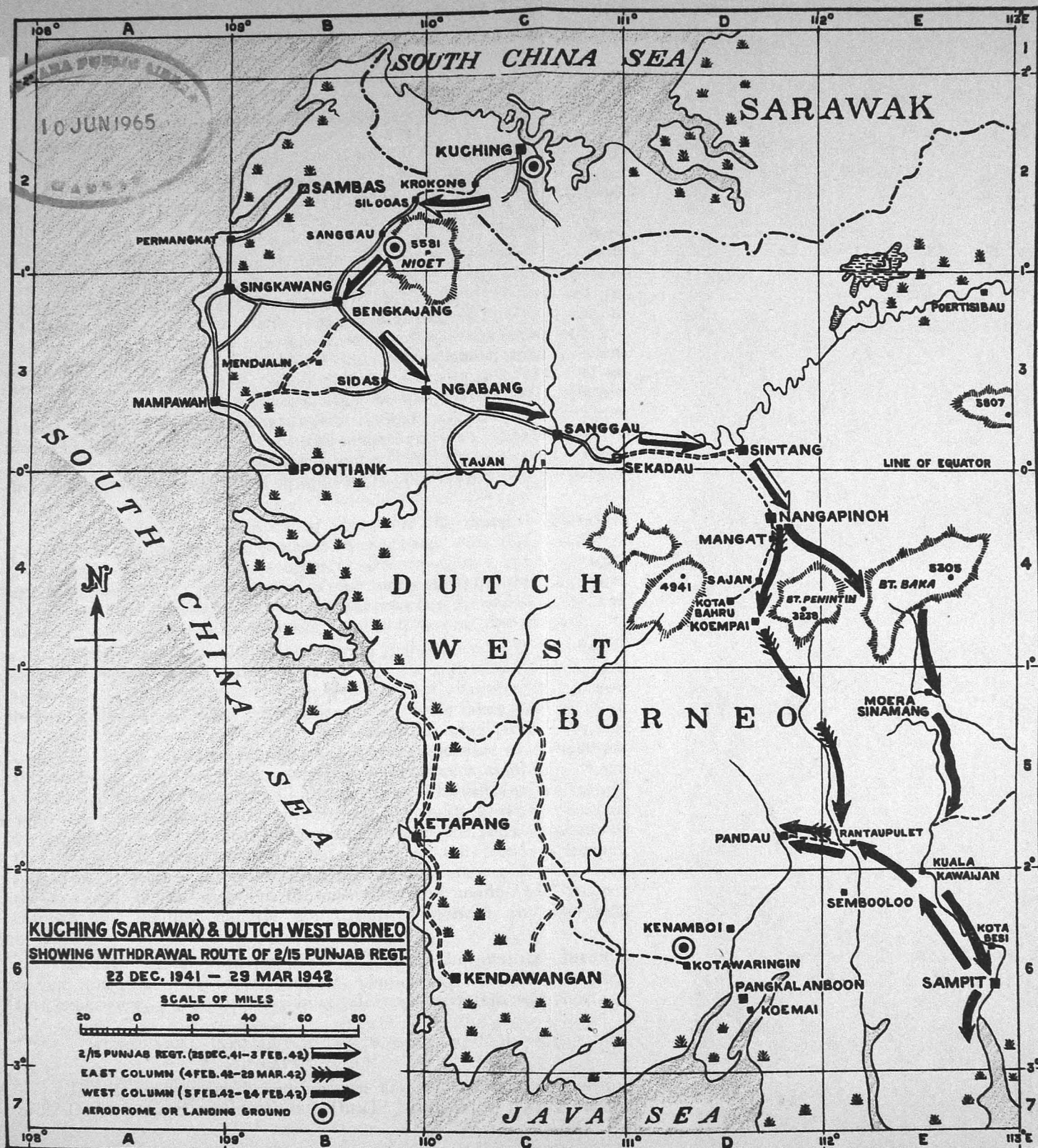
The hospital was again closed down and the move commenced. At 0030 hours the hospital arrived in Krokong with the casualties. The lorry containing medical equipment overturned on a narrow bridge en route and the greater portion of the medical equipment was lost. This was a big handicap as this accident prevented suitable medical attention being given to the casualties in the long trail that ensued.

At Krokong the casualties were again examined, and it was found that two of them were not in a fit state to walk and would either have to be carried or left behind. Stretchers were not available and so two heavy wooden doors of the local police station were taken and on these the casualties were taken forward. Several of the other patients by this time were in no condition to walk, but it was impossible to arrange for their carriage for hardly any stretcher bearers were available. Lack of food and medical supplies and above all the difficulties of the terrain aggravated the difficulties of withdrawal. It must, however, be said to the credit of the medical officers and men of the IGH detachment that despite all these hardships the health of the troops remained satisfactory. With whatever equipment they still managed to possess, the medical officers attended the casualties and made their journey comfortable. Neither malaria nor dysentery showed any increased incidence.

During the air raid on Kuching earlier the auxiliary medical service and ARP worked satisfactorily considering that this was their first experience. Unfortunately hospital accommodation was short.

WITHDRAWAL INTO DUTCH NORTH WEST BORNEO AND. CAPITULATION

The next stage in the withdrawal commenced on the morning of 27 December and continued into Dutch North-West Borneo passing



through the thickly wooded country as far as Djagoi Babang and thence in torrential rain to Siloas. The heavy rain had made the tract very muddy and difficult to traverse. A small rearguard and some sick were left at Risan for the night and the rest of the battalion pushed on to Siloas, where the IGH detachment joined the main party. The following day (28 December) the march was resumed and the party covered the last 20 miles of its journey to Sanggau and in the early hours of 29 December reached the river Tanggi opposite the town. After waiting many hours they were allowed to cross the river by the Dutch authorities and by midday the troops were comfortably installed in the barracks at Singkawan II aerodrome.

On 30 December, the Officer Commanding troops obtained permission from the Dutch territorial commander for the battalion to remain in Singkawan II until 4 January in order that all Companies might rest and reorganize. As mentioned earlier the detachment which was cut off at Batu Lintang also rejoined the battalion on 31 December. The same day Headquarters Malaya Command placed 2/15 Punjab under the command of the Dutch Headquarters. The battalion had suffered nearly 300 casualties during the fighting in Sarawak and its effective strength was only about 760. These were divided now into four companies and were armed with light weapons.

OPERATION NORTH-EAST OF SANGGAU

By 4 January the reorganisation was completed, and the battalion was deployed for operations immediately afterwards. Two companies were deployed in the forward areas and one company was given the task of defence of Singkawan II aerodrome. The rest of the battalion was kept in reserve. On 9 January the Japanese launched a strong attack on the forward troops and forced them back but the latter were able to stabilise a line, two and a half miles south of Djagoi-Babang on the following day.

During the following week, the Japanese were busy in consolidating their positions and bringing up reinforcements. Meanwhile, a line along the river Koemba was hastily prepared and manned by troops from 'D' and 'C' Coys. The Japanese launched a heavy attack on these positions on the morning of 17 January. On the right the attack was repulsed but the Japanese effected a break-through on the left and immediate withdrawal to Sanggau became imperative. By the following day all platoons in the forward area were withdrawn and despatched to Bengkajang for a short rest.

Meanwhile, at Singkawan II aerodrome the demolition of the landing strips, stores and barracks had commenced. These tasks were completed by 20 January. In concurrence with the Dutch, fresh plans were drawn up for the deployment of troops for the defence of the Sanggau roadhead. The troops were deployed as follows:—

- | | |
|----------|---|
| 'A' Coy: | Singkawan II aerodrome. |
| 'B' Coy: | (Plus two SMG sections): Sanggau roadhead and
astride the Sanggau-Momong road. |

'C' Coy: One pl-Sanggau. Two pls in a lay-back position
 one mile south of Kandasau.
 'D' Coy: One pl Sanggau. Two pls-Loemar.
 IGH dett and remainder of HQ Coy, Loemar.
 Bn HQ: Kandasau with a liaison officer at Sanggau.

Increasing Japanese activity in the Silooas - Setatok area was reported by the forward patrols on 25 January. Paling, two and a half miles to the north east, was occupied in strength by the Japanese. The following day an attack was launched against the forward Japanese positions but this attack did not make much headway. Following this on 27 January the Japanese attacked an Indian outpost at Segundai and captured it while on the following day the Japanese forces launched a strong attack on Sanggau roadhead at the same time sending a column southwards to outflank the aerodrome. In view of the critical situation the Indian troops were withdrawn to Ledo (10 miles south-west on the Samas river). Two platoons of 'B' Coy were total casualties in this withdrawal but the Japanese also suffered heavy casualties during this action.

JAPANESE LANDINGS ON THE WEST COAST

The long expected landing on the west coast of Borneo took place at Permangkat on the night of 27/28 January. Advancing north-east and south the Japanese captured Sambas, Singkiwan I, Mampawh and Pontianak, meeting little resistance from the Dutch troops. One company was detailed to reinforce Dutch forces holding the Penrang pass. The Japanese troops made contact with Penrang Pass on the afternoon of 28 January and after severe fighting broke through the flanks of the defenders. This made a withdrawal necessary and the Indian troops fell back to a position five miles to the west of Bengkajang. This position had also to be given up in face of incessant attacks and by the afternoon of 29 January the Indian troops had withdrawn to Ngabang and later to Sanggau on the river Kopeas. The last of the major actions against the Japanese had been fought. At the end of January two companies were deployed in Ngabang, a company between Ngabang and Sanggau and one company with battalion headquarters in Sanggau. The gruelling march of the troops across the swampy hinterland of South Borneo and the bitterness of surrender alone remained.

WITHDRAWAL TO SOUTH BORNEO AND CAPITULATION

It had been decided earlier that in case of a Japanese landing on the West Coast, the Indian battalion was to divide into two columns which were to make their way separately to Sampit and Pangkalanboon. Should the Japanese be already in possession of these two ports the columns were to disperse in groups of fifty into the interior. By 3 February the troops had reached Nangapinoh where they were divided into two columns—West and East. In addition a 'blitz' party of two officers and 4 IORs was formed with the intention of pushing on to Sampit with all possible speed to contact General Headquarters South-West Pacific Area and inform them of the situation in Borneo and the

whereabouts of Indian troops. The blitz party on arrival at Sampit found the wireless station destroyed and so proceeded to Pangkalan-boon via Semboonloo a difficult march of 100 miles covered in five days. Here the party was able to contact the General Headquarters on 19 February.

EAST COLUMN

The East Column with 'C' Coy in the lead left Nangapinoh on the morning of 4 February. On 13 February the column reached river Mendawi. Here rafts were built and the journey resumed down the river after three days. Paddling on these rafts through rocky rapids the party reached a short way above Moera Sinamang on 19 February where they were able to secure some boats in which the journey was continued to a point 12 miles east of Moera Sinamang. From here the column crossed to the river Mentaja, and proceeded along this river in rafts to Kuala Kawaijan. The battalion headquarters party which arrived at the latter destination first, proceeded straight to Sampit from where motor launches were sent up the river for bringing down the rest of the party. 'D' Coy was ordered to halt at Kota Besi whilst 'C' and 'H' Coys proceeded down the river Mentaja to its junction with the river Sampit, 18 miles south of Sampit. This party arrived at the junction of the rivers on 6 March and on the following day information was received that the Japanese had landed about nine miles down stream. A platoon of 'C' Coy which was despatched to investigate soon came under heavy small arms fire and had to withdraw. Owing to the lack of reserves of food, arms and ammunition it was decided to withdraw the whole column to Sampit marching along a clay path rendered unsuitable owing to continuous rain. Of a total of five officers, 3 VCOs and 183 IORs, 2 VCOs and 102 IORs failed to reach Sampit, most of them falling out into villages due to utter exhaustion. On the night of 7/8 March, the remainder set out up stream from Sampit in motor launches. 'D' Coy was collected at Kota Besi. Proceeding up stream they reached Kuala Kawajan wherefrom they proceeded across the jungle and reached Rantaupoulet on 16 March. Here first news of the west column was received as also the news that the Dutch had capitulated. The withdrawal was, however, continued to Pandawon on foot and to Kenamboi by boat. The latter destination was reached by 29 March.

WEST COLUMN

The difficulties encountered by the western column were similar in all respects to those of the East Column except that they had to cover a shorter distance. Marching beyond Koempai on foot the column moved down the river Seroyan on rafts and reached Rantaupoulet. After a march to Pandau the party boarded river crafts and reached Menamboi by 24 February.

The endurance and determination shown by men in the two columns deserve the highest praise especially those who were suffering

from malaria and dysentery. Through the wet and humid tropical jungle the men had marched on short rations with little hope of escape at the other end.

The first intimation of a general surrender was a broadcast message on 8 March by the C-in-C Dutch Forces that all organised resistance in the Netherland East Indies had ceased. The following day the Japanese issued a proclamation over the radio calling upon all Allied troops to surrender unconditionally forthwith. After much discussion the columns agreed to surrender and a Japanese naval vessel put in at Koemai on 31 March to accept the surrender. Arms and ammunition were handed over on 1 April. West Column embarked at Koemai on 3 April and reached Tanjong Priok POW Camp (Batavia) on 5 April. The other left on 7 April and reached Cycle Camp (Batavia) on 8 April.

MEDICAL COVER

The care of the sick and wounded during the campaign imposed a severe strain on the medical services. The depletion of the medical personnel during the operations in Sarawak had been very considerable. Lack of medical equipment and stores and the very frequent moves limited the scope of their work to a great extent. Evacuation of casualties to other medical units was out of the question as no such units existed and evacuation ex-Borneo was impossible in the absence of any facilities for it. Except in one instance where a number of serious casualties were evacuated to a missionary hospital, the IGH detachment always had to move with the patients. That the health of the troops remained quite satisfactory even during the arduous withdrawals and frequent actions were in itself eloquent tributes to the work of the medical services.

Prior to the crossing of the main body of troops into Dutch North-West Borneo the officer in charge of the IGH detachment (senior medical officer of the force) had proceeded in advance to contact the Dutch authorities to obtain medical supplies and equipment to be sent back to the main body. On arrival at Silooas at 1000 hours on 26 December he sent a message to the Headquarters Dutch Forces at Singkawan II apprising them of the situation and requesting for medical supplies and food. Later he proceeded there.

On 28 December, the main body of troops and the IGH detachment arrived in Singkawan II. All patients with the IGH Detachment also arrived safely. The hospital was opened in the barracks attached to the aerodrome on 29 December. After the hospital had begun functioning it was decided that some casualties could be evacuated to the nearest Dutch hospital in order to avoid congestion in the IGH which could be used for receiving casualties from the operations that were to be undertaken by the troops shortly. However, the nearest Dutch hospital was about 40 miles away in Bengkajang, and evacuation was difficult. Even so some of the more serious casualties were eventually evacuated to this hospital. This arrangement turned out to be very unsatisfactory, as food and accommodation was far below the standards expected, and consequently the patients evacuated there demanded to

be returned to the IGH. The detachment functioned at Singkawan II until 16 January when demolitions were undertaken in the aerodrome. Owing to the absence of any forward medical units, hospital personnel had to be detailed for duties in the operational areas, and accompanied the troops and evacuated casualties to the hospital. Fortunately, in none of the actions during this period the casualties were heavy and mostly all could walk. Otherwise transportation through jungle would have added further strain on the already meagre resources.

On the evening of 16 January, the hospital arrived in Leoman, with the HQ Coy of 2/15 Punjab Regt. The unit was opened in the same place on 16 January. On the following day the hospital was ordered to close down and to retire towards Bengkajang. In the subsequent withdrawal the hospital opened successively at Bengkajang, Ngaband and Sintang. The hospital was transporting its patients along in all these moves, and was actually performing the duties of a field ambulance, a casualty clearing station and general hospital combined. At Sintang about 30 patients comprising NCOs and men who by reason of sickness or wounds were unlikely to be fit for duty in any reasonable time were sent on 2 February in charge of one Sub-Assistant Surgeon and two IORs to a Mission Hospital in Poertibisau which was located outside the area of hostilities about 400 kilometers to the north-east of Sintang.

On 2 February, the IGH detachment arrived in Nangapinoh with the remaining patients. For the withdrawal to south-west Borneo the hospital personnel was divided between the east and west columns. The battalion was by this time very short of food and was dependent on whatever supplies were available from the villages. Clothes were reduced to rags and boots had become unserviceable. Medical supplies had virtually run out. In the action south of Sampit on 7 March one Sub Assistant Surgeon and 6 IORs of the IGH (East Column) were captured. The personnel accompanying the West Column arrived in Pangkalan-boon along with the column.

The physical and mental strain of the campaign, in addition to the hardships endured on the long marches and frequent actions had been very great. Food was meagre and living accommodation in most cases especially during the march southwards from Nangapinot had been non-existent. In spite of all these handicaps the health of the troops remained satisfactory.

CHAPTER III

Malaya

TOPOGRAPHY

The Malayan Peninsula is largely occupied in its centre by a mass of hills covered with dense forest. On either side of it are coastal plains, which on the west are to a great extent studded with rubber plantations and tin mining fields, though in the north and certain parts of the west rice is also grown. A great deal of the coast is covered with mangrove swamps on the west while on the east there are good sandy beaches throughout. Coconut and other plantations also abound on both the coasts but rubber predominates.

Communications

The main trunk road and railway, single-line metre gauge, run from Singapore to the north through the western plain. Branch rail lines link the main line with coastal centres and the railway to the east coast branches from the main line at Gemas and running east strikes the coast in the State of Kelantan, in the north-east of Malaya. It then runs parallel to the coast and joins the main line again at Haadyai in Thailand. There are numerous tunnels and bridges on the east coast section. In addition to the main road on the western plain there is also a coastal road with a number of lateral roads, especially in the central area. The main road with many local feeders runs 585 miles from the Johore Strait to the Thai frontier. It is almost invariably flanked throughout by either dense jungle, rubber plantations, deep canals or paddy fields which make rapid dispersal of transport or even turning a matter of great difficulty. Vehicles parked in rubber plantations, in certain soils, rapidly become bogged axle deep in a shower of rain. There are many bridges on this road. There is, however, little road communication between the east and west and none beyond 30 miles north of Kuala Lumpur. On the east coast there are very few roads, the only ones of importance being those which connect the ports of Mersing, Endau and Kuantan with the interior, and internal road system of the State of Kelantan. The only land communications between Kelantan and the rest of Malaya are a single-line railway and a fair weather coastal track. The road from Kuantan to the railway at Jerantut, 100 miles distant, is narrow and crosses two large unbridged rivers, west of Kuantan and again east of Jerantut by rope ferry. From Jerantut to the west and south good roads exist.

Climate

The climate of Malaya is enervating and humid with a temperature that varies little throughout the year and resembles that in the so called "Sloth belts" in India. The north-east monsoon blows from October to March and the south-west monsoon from April to September.

MALAYA STATES



LEGEND

ROADS: GENERALLY MOTORABLE.....

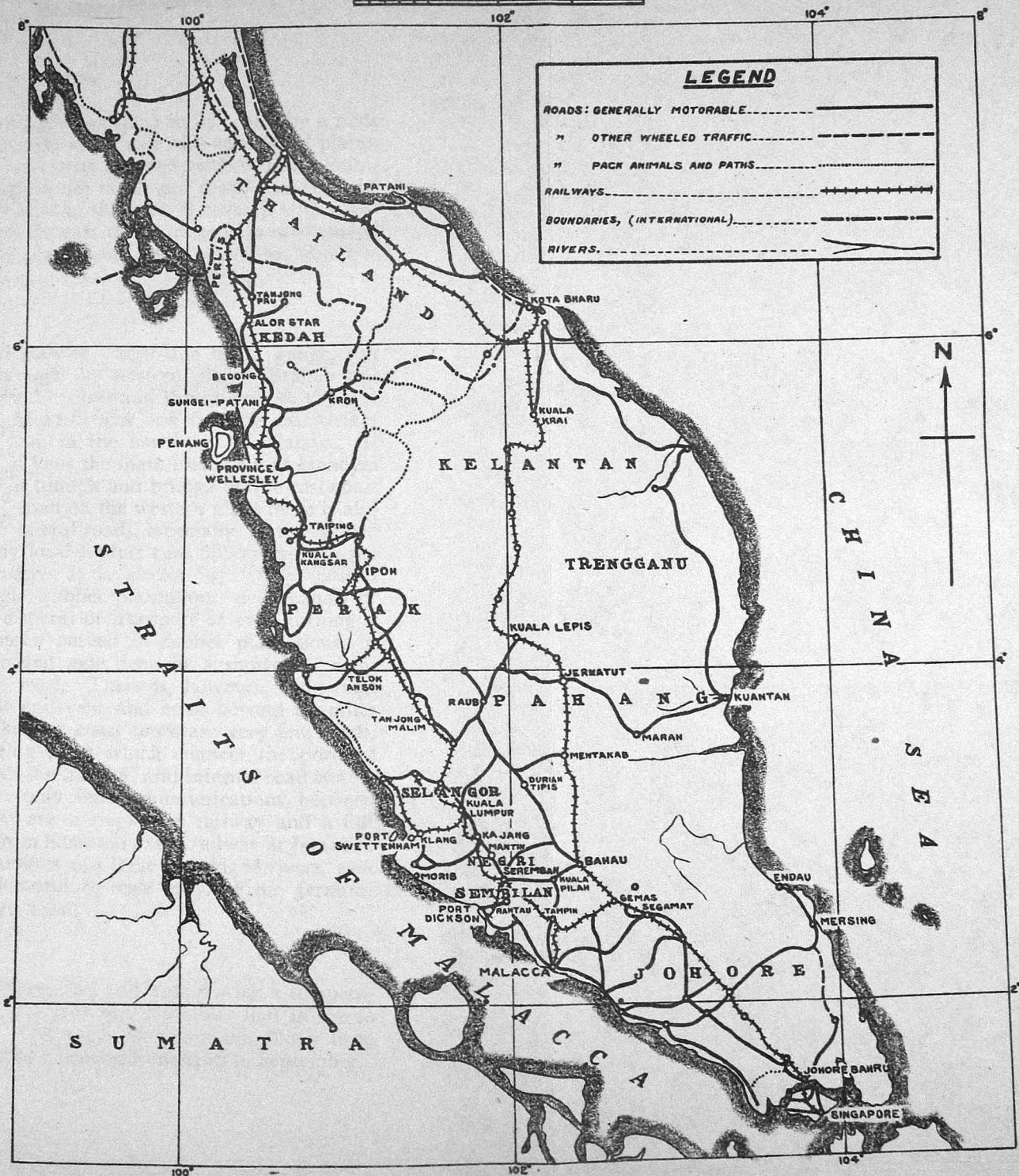
" OTHER WHEELED TRAFFIC.....

" PACK ANIMALS AND PATHS.....

RAILWAYS.....

BOUNDARIES, (INTERNATIONAL).....

RIVERS.....



PERIOD PRELIMINARY TO OPERATIONS

In Malaya a relatively long period was to elapse between the declaration of war on Germany and hostilities involving the country. One main feature of that period was the extent to which the interval was utilised to prepare the medical needs of the military force in the country in the event of hostilities and build up the medical resources. The meagre garrison at Singapore had been reinforced from India by the 12th Indian Infantry Brigade and a number of medical units—12 IGH, 18 Field Ambulance, 5 Field Hygiene Section, and No. 2 MAS for all of which accommodation was eventually prepared at Tyersall, the private park of the Sultan of Johore, on Singapore Island. In Singapore (apart from the units mentioned above) there was the Tanglin Military Hospital of some 240 beds (the number fluctuating during the ensuing months) and reception stations at Changi, Blakang Mati and P. Brani. Alexandra Hospital was in the process of building and did not open until the middle of 1940. There were also in Malaya two other Field Ambulances: The Singapore Straits Settlement Volunteer Force Field Ambulance (SSVF Fd. Amb.) at Singapore and the Federated Malay States Volunteer Force Field Ambulance (FMSVF Fd. Amb.) at Kuala Lumpur. These were, however, not on a satisfactory basis and their ability to function in the event of hostilities was open to doubt. The former was largely composed of medical students (70 members). Both the Field Ambulances, however, suffered from lack of training. Reserves of medical stores were also low, though the Civil medical authorities were willing to help in this respect and did so when required. The attempt to get certain equipment, such as stretchers, prepared locally proved disappointing. They were found to be poor both in workmanship and in the quality of the material used.

During the months following the outbreak of the war investigations were made through the DMS Straits Settlement (civil medical services) as to the possibility of securing non-Government medical officers and nursing staff from civil sources for military services and also of recruiting from the Chinese and Eurasian communities for an Asian field ambulance. These efforts met with no success. There were complications, however, in the procedure of tapping local resources for this purpose. Terms of pay and service had to be approved by the War Office and there were long delays in getting replies and in some cases the approved rates of pay did not appear to be attractive. A further difficulty, to begin with, was caused by the limitations in respect of the nationality acceptable. Sanction had also to be obtained from the War Office for all increases of establishment and for the raising of new units. Thus, although approval was given to commission Asian medical men in the RAMC as early as November 1940, a decision regarding rates of pay was not received until July 1941 and the first Asian doctor was not recruited until September 1941.

Up to June 1940, no compulsory service existed for anyone in Malaya but a Straits Settlement Government Gazette at that time published an ordinance for securing and controlling male British subjects for service in the defence of the Colony during the emergency. It did not affect the Asian population and it was later found that although

long lists were kept of medical men available for duty with the volunteer Force yet nearly all claimed and got exemption when called upon. Towards the end of 1940 when considerable reinforcements arrived, the medical position in Malaya was as under:—

ADMS Malaya later DDMS Malaya Command			
ADMS Singapore Fortress			
18 Indian Field Ambulance (less one Coy)	in Singapore		
Alexandra Hospital 356 beds ..	.. in Singapore		
One Coy 18 Indian Field Ambulance	.. in Penang		
SV Field Ambulance			
5 Indian Field Hygiene Section			
No 2 Motor Ambulance Section			
Hospital 160 beds increased to 200 beds in			
November 1940	..	.. in Tanglin	
12 Indian General Hospital 140 beds			
increased in November 1940 to 210			
Base Depot Medical Stores	..	.. in Tanglin	
FMSVF Field Ambulance			
Asiatic Hospital—an extension of the recep-			
tion station	..	..	.. in Balakang Mati
Reception Stations	..	..	.. in Taiping P. Brani Changi

Early in 1941, further reinforcements accompanied by medical units began to arrive from India and Australia and the DDMS AHQ India visited Malaya in March to ascertain the medical requirements and get a forecast, however rough, of medical units likely to be required during the year and also details regarding the personnel and equipment required with these units. Owing to repeated changes of policy, Malaya had found it impossible at any time to appreciate the situation but it was now working on a peak figure of approximately 80,000 troops, though this figure was by no means firm. The medical units for all this force (exclusive of AIF) were being supplied by India, and Malaya had already been informed by the War Office that owing to man-power shortage in the United Kingdom no further increases in the Field Force units could be made from there.

By the beginning of 1941, there were available in Malaya from military hospital sources 614 beds (22 for officers) for B.T. and 1,100 for I.T. The civil authorities had promised to make available 1,500 beds for B.T. and 2,900 beds for I.T. in the event of hostilities but these figures were under revision as the military authorities had then taken over some of the civil hospitals. In Malacca for example, 1000 beds, for B.T. and I.T., had been promised but the civil hospital had been taken over by 2/10 Australian General Hospital. By July the question had to be decided whether to disperse or concentrate the further requirements of accommodation in military hospitals; i.e. whether to expand the existing military hospitals or locate new ones and expand these as required. Concentration would obviously make far easier administration and saving in personnel and equipment whilst dispersal would shorten distances and effect economy in ambulance cars and trains. The deciding factors in favour of dispersal were, however, the vulnerability

of hospitals such as Alexandra and Malacca and the possibility of Singapore being cut off from the mainland. But it was decided that in Singapore only, Alexandra Hospital (now 450 beds) and No. 12 IGH should further expand with a certain amount of dispersal into suitable private residences in the neighbourhood. This, however, met with considerable opposition from the owners of these houses.

No satisfactory arrangement could also be made in regard to hospital ships. The policy was to evacuate from Malaya all cases not likely to be fit for duty within two months but, apart from a lack of hospital ships, considerable delay was experienced at this time in collecting sufficient cases to fill even one ship. This resulted in evacuating by troopship or packet vessel all cases able to look after themselves. All evacuation was carried out from Singapore. In March 1941, India had enquired from Malaya what their requirements of hospital ships would be and had been informed that the question had been taken up with the War Office who would inform India of their policy. In August it was decided that the hospital ship *Karapara* should remain under the control of India; but Malaya suggested that it should call monthly and evacuate patients estimated as approximately 100 per month. The question of evacuating cases by sea, from Penang and ports on the coast of Malaya, to Singapore was considered and two small coastal vessels were inspected with a view to fitting them for this purpose, but the *Wu Sueh* (a Yangtse river boat) was eventually chosen for conversion. It was, however, never used for that purpose.

In August 1941, approval was received to recruit locally 25 per cent personnel for a CCS, a Field Ambulance and two MACs, the vehicles and equipment being provided by the United Kingdom, as also the remaining 75 per cent of officers and NCOs for the first two units and NCOs down to the Sergeants for the other two. Recruiting for these units started in September. Local recruitment, which had commenced in February 1941 for a Malayan Field Ambulance had by August produced 148 ORs (European and Eurasian) out of 153 required and also a staff for a Field Hygiene Section. The Auxiliary Medical Depot which had started functioning in May had enrolled 520 out of 592 required. This unit was a depot for the training of all locally enlisted personnel Chinese and Indians, and was the parent unit for the staff of the three ambulance trains, a Bearer Corps unit of 210 (including the Dewas State Unit, whose donor wished it to retain its identity), 150 Chinese rickshaw pullers and 86 ambulance car orderlies of the Malayan MAC.

By October, a Malaria Field Laboratory Unit (No. 6) was formed with officers from the Malayan Medical Service—three malariologists and an entomologist—and accommodation for a military hospital had been allotted in the new general hospital, in South Johore. The position as regards medical stores was also satisfactory, reserves having been built up to a six months basis.

Thus when the hostilities commenced the following units were in the process of formation or training:—

No. 1 Malayan Field Ambulance, No. 4 Malayan Field Ambulance, No. 1 Malayan CBS, No. 1 Malayan General Hospital, No. 1

Malayan MAC, No. 2 Malayan MAC. The general hospital, the CCS and the No. 1 MAC were able to give valuable service in the latter part of the Malayan operations but the foundations of these units were essentially British service personnel.

Although local recruiting had been very slow for the military services (including the Emergency Nursing Service) yet the civil authorities had recruited extensively and well for a civil Malayan Auxiliary Service which was an integral part of the medical department and on the basis of a similar service in the United Kingdom; Europeans, Indians and Chinese were enrolled. Factors influencing response were probably that the members worked in their own locality and women had not to leave their homes and there was no limitation on nationality. When later on, operations caused towns on the mainland to be evacuated, many from this service joined the military hospitals and units in Singapore and formed a very vital part of these units.

By the time hostilities began no firm policy seems to have been established in respect of hospital ships and this is borne out by the fact that no evacuation of casualties by hospital ship took place from Malaya after the commencement of operations except approximately 300 British, Indian and Australian troops on the *Wu Sueh* just before capitulation. Some 118 sick of the AIF were sent away on the SS *Orion* on 31 December 1941. It would seem to have been a wise course to insist on hospital ships being immediately available in the event of hostilities occurring before an adequate air force was ready to operate and all preparations were complete.

The position in Singapore at the commencement of hostilities was as follows:—

GOC Malaya — Lt.-Gen. A. E. Percival	
Singapore Fortress	A. A. Defences
1st (Malayan Infantry Brigade)	Four A. A. Regts (British)
2 Loyals	One A. A. Regt (Indian)
1 Malayan Regt	One S. L. Regt (British)
Coast Defences	12th Indian Infantry Brigade
Three R. A. Regts	2 Argylls
Two Fortress Coys	5/2 Punjab
R.E.	4/19 Hyderabad
2nd Malayan Infantry Brigade	15 Coy S & M
1 Manchesters	
2 Gordons	
2/17 Dogra	
SSVF	

Medical

DDMS Malaya Command Singapore Fortress

ADMS

Alexandra Hospital

Tanglin Hospital

12 IGH

Asiatic Hospital (Blankang Mati)

(with one section

12 IGH)

Aux. Med. Depot

18 Field Ambulance

SV Field Ambulance

Spre. Fd. Hyg. Sect.

No. 6 Malaria Fd. Lab.
 Special Ambulance Car Coy.
 No. 2 British Convalescent Depot
 No. 1 Ambulance Train (under control)
 No. 1 British Depot Medical Stores Tanglin.

A number of medical units had left for the III Indian Corps area about this time and one (18 Field Ambulance) was to leave in a few days.

The following locally raised units were not yet ready to function:—

1 Malayan GH, 1 Malayan CCS, 1 and 4 Malayan Field Ambulance, 1 and 2 Malayan MACs and the hospital ship *Wu Sueh* intended for coastal work.

The number of hospital beds available could not be increased owing to various factors:—12 IGH had one Section at Kuala Lepis and one at Kuala Krai. Alexandra Hospital (450 beds) was scheduled to expand to 600 but difficulty had been experienced in getting the necessary accommodation and it was not until some days afterwards that it opened about 70 beds in three large private houses in Chatsworth Avenue called Chatsworth Auxiliary Military Hospital where the matron and entire nursing staff, with the exception of four sisters, were members of the 'Medical Auxiliary Service'. This hospital except for the drugs and surgical instruments was supported from private funds. Tanglin Hospital (160 beds) was a special hospital for Venereal Diseases and skin cases and the number of beds fluctuated somewhat with the demand. Owing to the fast altering circumstances the number of beds promised by the civil authorities for military cases could never be considered firm and at the outbreak of hostilities it was in the region of 200 beds for British and 300 beds for Indian patients in the town of Singapore.

In November 1940, reinforcements arrived as Force 'Bunker' and a command called Northern Area was set up with its HQ at Kuala Lumpur. The GOC of this area was responsible to the GOC Malaya for the whole of the Malayan Peninsula, exclusive of the state of Johore, and his tasks were to prevent any hostile landing on the Kelantan and Pahang coasts on the east and to stop any invasion from Thailand in Kedah and Perlis. The force was composed of a divisional HQ with administrative troops and two Indian infantry brigades. The 8th Indian Infantry Brigade proceeded to the east coast to Kota Bharu and Kuantan. The 6th Indian Infantry Brigade at first temporarily located at Ipoh and Sungei Patani went afterwards into hutted camps at or near Tanjong Pau. The medical units which accompanied this force included the following:—

16 Indian Field Ambulance—which moved with 6th Indian Infantry Brigade to Ipoh
 15 Indian Field Ambulance (less one Coy) to Kota Bharu
 1 Coy 15 Indian Field Ambulance to Kuantan
 5 Indian CCS (with no equipment) located at Singapore
 13 Indian Field Hygiene Section located at Kuala Lumpur
 No. 1 Indian MAS (less 11 cars at Singapore) to Maha Stadium, Kuala Lumpur

No. 5 Indian MAS to Maha Stadium, Kuala Lumpur
'A' and 'B' Sections of an IGH to Batu Road School, Kuala Lumpur.¹

For the HQ medical staff a very active period followed of reconnaissance, planning and administrative arrangements. The medical resources of the force, which was widely dispersed, were inadequate for immediate needs and far short of those required in the event of hostilities. However, the immediate needs of the force in hospital accommodation were met by arrangements made by the Malaya Command. Patients who could not be dealt with by military medical units could be admitted to the local civil hospitals. This was particularly necessary for officers and BORs for whom there was no adequate accommodation in any military hospital outside Singapore. Though in the larger towns civil hospitals were of a very high standard, in the smaller towns and outlying areas accommodation was mainly on a standard lower than that available in military hospitals and necessitated patients being treated in the general wards. Moreover, civil medical officers generally had neither the time nor the staff for maintaining separate military records nor did they see the necessity for the prompt return of men to duty and the elimination of the unfit. Patients, therefore, were apt to be lost sight of and retained longer than necessary. The need for close liaison between both Regimental and Field Ambulance medical officers and civil hospitals thus became apparent early, especially in respect of Indian patients, in whose case language and feeding difficulties also arose. To a great extent the lack of experience and training of junior military medical officers contributed to these difficulties which were gradually rectified with the co-operation of the civil medical officers when the position was explained to them. But the scheme had been very imperfectly worked out beforehand and was not a satisfactory one, as field ambulances were tied up for many months in running camp hospitals and much needed training was interfered with. Although efforts were made to get 5 Indian CCS liberated from Singapore, where it functioned for a time as an improvised Field Ambulance and on duties with local hospitals, it was not until July that it came into northern area.

The absence of ambulance rail coaches or trains made it impossible to send any but special cases to Singapore. The question of ambulance coaches or trains was raised several times with Malaya Command but it appeared that the Malayan railway would not agree at this time to liberate the necessary rolling stock until a state of emergency was proclaimed when they stated they could be made available in a few days. It was, however, discovered that this depended on special fittings being available which would take approximately six weeks to make. Orders were, therefore, obtained for these fittings to be made and held ready.

In the event of hostilities the following arrangement existed with the civil authorities for extra hospital accommodation for the force. In certain civil hospitals a number of beds, amounting to 1,280 in all

¹ These two sections eventually, by the end of the month, opened 124 beds but were unable to deal with other than minor medical and surgical cases as they had not the necessary skilled nursing or theatre staff for serious cases.

(800 for British and 480 for Indian troops) were to be set aside for military patients. These beds were allotted in the following hospitals:—

Alor Star (200 Indian), Penang (300 British, 200 Indian), Kuala Lumpur (100 British, 80 Indian), Seremban (400 British).

This was definitely a plan to meet an emergency and not one of choice, for the chances of its working satisfactorily were for several reasons remote. These were apparent later when during the course of hostilities, a certain amount of accommodation was required from this source.

The lack of motor ambulance transport for this widely dispersed force was to be met in the event of an emergency by local requisitioning of civil vehicles. The main drawback of this plan was the lack of a reserve of trained military drivers and dependence on local civil sources. RIASC heavy transport vehicles all carried a steel wire fitting capable of being adjusted in a few minutes and enabling four stretchers to be taken. These vehicles were of course primarily earmarked for other duties and could be made available only under certain limited circumstances.

The need to build up the medical resources in this area, especially in view of further expected reinforcements, was imperative. Requests for additional medical units urgently needed were, therefore, formulated but it was soon realised that these could not be made available for some time. However, as the requests were entertained preparation of accommodation for the units in suitable localities was commenced. The most expeditious and satisfactory way of accommodating hospitals was to take over and convert permanent buildings as far as possible, such as schools, in suitable localities. There were two great advantages in this course one that these buildings existed in areas already fully controlled against malaria and two that the minimum of constructional work was involved at a time when labour and material were rapidly being used to capacity. Negotiations for these buildings were apt to be slow and took up a lot of time, as apart from the devious channels they had to go through, the civil authorities were at this time very loth to disrupt the normal life of the community by the surrender of schools and institutes. Even after permission was received there was an inevitable time lag before work on conversion could be commenced. Accommodation was, however, prepared in permanent buildings for the following units:—

CCS and MAC at Kajang, CGH and MAS at Tanjong Malim (Sultan Idris College) and IGH and Advanced Depot Medical Stores at Kuala Lumpur.

Construction of hutted accommodation for the following units was decided on and commenced as no suitable permanent buildings were available in the localities:—

CCS at Kuala Lepis on the east coast, CCS at Bedong on the west coast (Kedah), Staging Sections at Jeruntut in Pahang and at Maran on the Kuantan Road.

Provision was also made in some large hutted camps in brigade areas for such units as field ambulance (with camp hospitals to be staffed by these units) field hygiene sections and anti-malaria units.

In the early stages of this period troops occupied race courses, permanent buildings, tented and partially prepared hutted camps while the siting and building of numerous and in some cases enormous hutted camps was begun and pushed forward as speedily as possible throughout northern area for the accommodation of the force and the expected reinforcements. Delay in the preparation of these camps beforehand had been largely due to frequent changes of location statements and this enormous work was, therefore, now thrown on this force. The policy of siting these camps in rubber plantations had been approved for tactical reasons and the camps were consequently airless, damp, gloomy and depressing. These conditions later led to the establishing of 'Change of Air' camps in bright and cheerful surroundings. All these camps were in areas outside any form of anti-malarial control and one of the important medical tasks was to ensure that they were sited in areas where full anti-malarial control could be established in a reasonable time and at a reasonable cost. For this purpose co-operation of the Malayan Medical Service, which commanded a certain amount of trained labour, and which was expert in this form of work was sought. It was mainly responsible for the very important initial work and did it magnificently.

Many difficulties had, however, to be smoothed out with the civil authorities, especially in regard to finance. It was rather disconcerting to find that work, which had been agreed upon and satisfactorily started after funds had been made available, was suddenly stopped without notice when the money on hand was exhausted and a further cheque had not been received. Numerous local problems in connection with sanitation and water supply had also to be dealt with. Generally, however, in hutted camps bore-hole latrines were almost universal and extremely satisfactory. These were fitted with special covers for British and Indian troops. 13 Field Hygiene Section was equipped locally with materials for preparing these bore-holes and also with a sanitary lorry, both of which items of equipment proved invaluable. In areas where it was not possible to place bore-holes the bucket system was in force. The sanitary lorry collected and replaced the used rubber latrine buckets, which were then conveyed to a destructor for the disposal of the contents and disinfection of the buckets. Shower baths, drying rooms, wash houses and 'Preventive Ablution Centres' were provided in all hutted camps. The water supply was ample, of good quality and mainly piped.

The authorised medical establishment of this force did not provide for a DADH and the need of one was felt very acutely during this period but on representation an officer was lent from HQ Malaya Command—a permanent appointment was fortunately afterwards approved.

Office work was also at this time very heavy and threw a great strain on the small and inexperienced clerical staff which was working under most difficult conditions. Besides the enormous correspondence relating to the new projects all returns were on a peace-time basis and even after second echelon had commenced functioning it was some time before this was altered. It was probably unavoidable but, with a force under such conditions on a field service scale, it was most desirable to reduce all office work to a minimum as much of the work on hand was

urgent and could only be speeded up by numerous personal interviews with the various departments and officials concerned.

With the rapid expansion of the Indian army the demand for medical officers was much greater than the available supply while experienced officers were few. The majority of medical officers who came from India—and many of the emergency commissioned medical officers from the United Kingdom—arrived in Malaya with almost no knowledge of military routine or discipline nor of their responsibilities in regard to hygiene and sanitation. The great scarcity of military, medical and field training manuals, which were at this time almost unobtainable, may have contributed somewhat to this state of affairs. Many of these officers came with medical units which had been newly raised and did not normally exist in peace time and whose personnel had been sent overseas with almost complete lack of training. The need for instruction and training in the policy in regard to hospitalisation and in their new duties was immediate but difficult to effect with such a widely dispersed force.

It was not until late in 1941 that field ambulance could be released from camp hospital duties for training as complete units and then it was apparent to all the field ambulance commanders that there was need for readjustment in the organisation and equipment of these units to make them more mobile and suited to the condition in Malaya. In Indian field ambulances there was an excess of equipment and personnel compared to British and Australian units but all these units could not be moved without additional transport. They were all equipped to open a formal MDS and two ADSs, but it was finally agreed that the Field Ambulance HQ should be organised into a Heavy and Light Section and each Company into a HQ and three sub-sections (L/S ADS) all capable of operating independently. The full medical equipment was retained and much of the heavy ordnance equipment dispensed with. The general consensus of opinion was that the motor transport sanctioned was very inadequate for conditions of mobile warfare whereas the number of stretcher bearers was far greater than likely to be required and if the occasion arose for using large numbers the need would be better met by special Bearer Corps which could be utilised when required. To some extent the lack of ambulance cars was met during the operations by the use of MAS cars working well forward with the field ambulances and thus releasing their cars for use between units and the ADSs.

Other units also suffered from lack of training and the effects of rapid expansion could be seen in their lack of equipment or of its varied types. In field hygiene sections tradesmen as such were often in name only and had little knowledge of the trade for which they had been enlisted. Few of these units were capable of undertaking anti-malarial work and the first to arrive had no disinfectors. Some units of the force arrived with water trailers, some with water carts and some with water tanks on lorries. The trailers had the disadvantage that they could not be pulled on a hilly road by a loaded lorry and were unable to move independently while the water tanks had no filters or pumps.

In February 1941, the first of the expected reinforcements, for which Northern Area HQ had been preparing, began to arrive—a brigade group of the 8th Australian Division—with a number of medical units of which 2/4 CCS and one Section MAC (both AIF) went to the accommodation prepared at Kajang. In March, the 15th Indian Infantry Brigade arrived with 28 Indian Field Ambulance and went to Ipoh. They were quickly followed in April by HQ 9th Indian Division and 22nd Indian Infantry Brigade with 27 Indian Field Ambulance. This field ambulance was on a special scale war establishment, the main feature being that it had sufficient transport to carry all its personnel and equipment. By now numerous medical units such as staging sections, X-ray units, anti-malaria units and convalescent depots, advance depot medical stores were arriving in the country. One CGH arrived in April and was sent to Tanjong Malim and another was to follow in May (20 CGH) and was eventually to go to the accommodation prepared for it at Taiping. An L of C area was also in process of formation and in May the title of Northern Area was abolished and the 11th Indian Division came into being. Readjustments of formations in the two Indian Divisions (9th and 11th) took place and finally the 11th Indian Division with most of the divisional troops and the 15th Indian Infantry Brigade moved to Sungei Patani where they occupied one of the largest hutted camps (some 12 square miles in area) in a rubber plantation.

Divisional responsibility was restricted to Perlis, Kedah and Province Wellesley. Each brigade area—Sungei Patani and Tanjong Pau on the West coast and Kelantan and Kuantan on the East coast—had a hutted camp hospital, staffed and administered by a field ambulance for which additional equipment was eventually supplied. On the West coast the more serious cases were evacuated by road or passenger train to Tanjong Malim and on the East coast to Kuala Lepis by road or rail and from there, if necessary, to Singapore. No ambulance trains were yet available but by the beginning of June an ambulance coach service (rail) was running to Tanjong Malim. These coaches had no Red Cross markings and were attached to passenger trains. Towards the end of May 1941, III Indian Corps (GOC Lieut.-General Sir L. Heath, DDMS Brig. Seaver) arrived and established HQ at Kuala Lumpur. By 1 July when the task of III Indian Corps was finally allocated, it took full operational control of all Malaya, north of Johore (exclusive of Malacca).

The distribution of troops and medical units when III Indian Corps assumed command was as follows:—

11th Indian Division Area

Div HQ	Sungei Patani
6th Ind Inf Bde	Tanjong Pau (less one Bn)
15th Ind Inf Bde	Sungei Patani
with 1 Bn Penang	
1 Bn Kroh	
1 Bn Perlis	

Penang Fortress

2 Bns	
R.A. and ancillary troops	SMO

<i>L of C Area</i>	HQ Kuala Lumpur
Ancillary troops	Responsible for the operational control and administration of the Volunteer units, none of which had been yet called up.
<i>9th Indian Division Area</i>	
Div HQ	Kuala Lumpur
8th Ind Inf Bde	Kelantan
	HQ Kota Bharu
22nd Ind Inf Bde	Kuantan and Area HQ
	Kuantan
<i>Distribution of Medical Units</i>	
11th Indian Division	16 Fd Amb Tangong Pau
	28 Fd Amb Sungei Patani
	27 Fd Amb
	(less 1 Coy) Kroh
	5 MAS (25 cars)
	6 Anti-malaria unit Tanjong Pau
	13 Field Hygiene Section Sungei Patani
	Hutted accommodation still under construction for 5 CCS and 8
	Advance Medical Stores Depot Bedong
<i>Penang Fortress</i>	Reception Hospital (British 14 Beds)
	1 Coy 18 Fd Amb
	Sub Depot Medical Stores
<i>L of C Area</i>	17 CGH (11 British 500 Indian) Tanjong Malim
	MAS (25 cars)
	12 IGH (1 Section 100 beds) Kuala Lumpur
	Accommodation being prepared for 20 CGH (100 British 500 Indian)
	2 Advance Medical Stores Depot Taiping
	2 Mobile Bacteriological Laboratory Kuala Lumpur
	Tanjong Malim
<i>9th Indian Division</i>	15 Fd Amb Kota Bharu
	1 Coy 27 Fd Amb Kuantan
	10 Staging Section (Indian) Maran
	2 Staging section (Indian) Jerantut
	12 IGH (1 Section 100 beds) Kuala Lepis
	5 Anti-malaria Unit Kota Bharu

The policy now was to make III Indian Corps area self-contained as far as possible and it was decided that a considerable increase of medical units was necessary—particularly of those providing hospital accommodation. The DDMS III Indian Corps, therefore, asked for sufficient hospitals to provide accommodation in all categories for 10 per cent of the Force in addition to two CCSs (one for Kuala Krai, owing to the difficult communications), five MASs, two ambulance trains, one Field Hygiene Section, and two Convalescent Depots (British and Indian) two of which units were already in the country.

During the months following more troops and medical units arrived in III Indian Corps area until the ration strength there approximated to 55,000 (10,000 British) exclusive of volunteer units. The 28th Indian

Infantry Brigade arrived in September with 36 Indian Field Ambulance and moved to Ipoh (less 1 Bn to Taiping)—Artillery, Anti Tank and AA Regiments arriving after with other units. In August, 27 IGH (400 beds) arrived in Penang and in September 19 IGH arrived at Mantin, where it was temporarily located pending completion of its accommodation at Segamat, South Johore. By October it had opened 200 beds for local requirements out of its total of 1,000 beds.

The equipment of Indian hospitals was inferior and their furniture did not stand up to the strain of a long journey, much of it arriving unfit for use. They had virtually no laboratory or X-ray facilities and they were poorly staffed with specialists, only one medical and one surgical specialist being authorised. As a rule they had only one surgical team and the staff of nursing sisters was very inadequate, some having none. The lack of nursing staff was, however, partly due to a policy which had been accepted by Malaya in the early part of the year, that India should send hospitals without nurses unless specifically asked for; and that only one per cent per Section would be asked for, the remainder up to 3 per cent per Section being recruited locally. India had emphasised the shortage of IMNS and had sanctioned their local recruitment as early as December 1940. Owing to nationality restrictions and other difficulties only two had been recruited in Malaya by August 1941. To compensate for the lack of laboratory and X-ray facilities in these hospitals two mobile bacteriological laboratories and three X-ray units were sent from India—no mobile X-ray units being available. Difficulties were subsequently experienced with these X-ray units owing to different types of electrical current available in different stations.

Patients requiring specialist treatment, other than medical or surgical, had either to be transferred to Singapore (if sanctioned) or referred to local civil specialists; although, for instance, there were several IMS officers who were qualified specialists in ophthalmology none was authorised on the establishment nor was the necessary equipment available. As there was no dental establishment with any Indian medical unit, dental centres staffed by British Service dental officers were formed and located at Bedong, Penang, Kuala Lumpur, Kota Bharu and Tanjong Malim. A blood bank was also made available for military hospitals by the Malayan Medical Service which staffed and organised a very efficient system of collecting plasma with branches all over Malaya (Kuala Lumpur, Penang and Singapore) under central control. The plasma was sent to the Civil General Hospital, Singapore and the Medical Research Institute, Kuala Lumpur. In Singapore in July 1941 there were 3,000 donors and when later heavy air raid casualties occurred queues of Chinese men stood at the Tan Tock Sen Hospital waiting to offer their blood. Hospitals stocked sufficient blood for their daily requirements and obtained further supplies from the centres mentioned above.

As hospitals arrived from India the policy of treating patients in camp hospitals in Brigade areas was discontinued as far as possible, as it was being realised that it interfered to a great extent with field ambulance training. Treatment of military patients in civil hospitals

was also cut down to a minimum but still had to continue for certain diseases, partly owing to the wide dispersal of the force and partly owing to the absence of special hospitals for these cases.

There were no special hospitals for infectious, venereal or tubercular diseases outside Singapore. The available hospitals could not, therefore, deal with the needs of the Malayan force. On the advice of the Consultant Surgeon Malaya, no special hospital was considered necessary for the treatment of orthopaedic cases. The surgical specialist in each general hospital, therefore, organised and trained a team for this work.

In order to provide further much needed hospital accommodation for officers it was decided to expand, by 50 beds each, two of the hospitals already functioning—17 CGH at Tanjong Malim and 20 CGH at Taiping. To ease the hospital situation generally No. 1 Indian Convalescent Depot was sent up in August from Singapore to Morib where it was ready to function by October and one Section 12 IGH was sent to Kuala Krai on the East coast. Ambulance coaches were also working between the CCS and general hospitals but it was not until November that one ambulance train with a capacity for 180 lying cases was made available. The position in regard to motor ambulance transport was also more satisfactory as one MAC (AIF) 75 cars, and four MASs each of 25 cars were now in the area. In addition to No. 2 Advanced Medical Depot at Kuala Lumpur and No. 8 Advanced Medical Stores Depot at Bedong (with reserve stretcher dump) sub-depot medical stores had been placed at Kuala Lepis and Kuala Krai.

27 Ind Fd Amb	Kuantan
MAS (25 cars)	
2 Indian Staging Section	
10 Indian Field Hygiene Section (1 Sub-Section)	

Penang Fortress
 27 IGH—400 beds
 British Reception Station 14 beds
 18 Ind Fd Amb (1 Coy)
 Sub Depot Medical Stores

L of C Area

5 Indian CCS (300 beds)
 8 Advance Medical Stores Depot
 20 CGH (600 beds: 100 British 500 Indian)
 17 CGH (900 beds)
 Reception Station (Indian) (40 beds)
 Indian Convalescent Depot (500)
 2 Advance Medical Stores Depot
 1 Ambulance Train
 FMSVF Fd Amb
 2/3 MAC (AIF) 75 Cars
 MAS (25 cars)
 MAS (25 cars)
 2 Malayan MAC (In process of raising and unfit for service)

West Coast

Bedong
 Bedong
 Taiping
 Mantin
 Kuala Lumpur
 Morib
 Kuala Lumpur
 Tanjong Malim
 Kuala Lumpur
 Ipoh
 Tanjong Malim
 Kajang
 Kuala Lumpur

	<i>East Coast</i>
1 Section 12 IGH (100 beds)	Kuala Krai
1 Section 12 IGH (100 beds)	Kuala Lepis
Sub Depot Medical Stores	Kuala Krai
Sub Depot Medical Stores	Kuala Lepis

Provisional arrangements were also made with the various States for hospital beds as follows:

Penang ..	.. 500 (British—300, Indian—200)
Taiping ..	.. 500 (British—300, Indian—200)
Kuala Lumpur	.. 400 (British—200, Indian—200)
Seremban ..	.. 400 (British—100, Indian—300)

Construction was still in progress for the accommodation of three medical units when hostilities commenced and was consequently never completed. These units included a venereal disease hospital in Taiping, a British convalescent depot in Cameron Highlands and a hospital (300 beds) at Kuala Krai. For the last unit there was neither personnel nor equipment in the country. The civil authorities intimated that the beds previously allotted for military cases in civil hospitals in the event of emergency were not reserved for military cases only but were intended for all cases—civil and military.

On 1 December 1941, when the second degree readiness was ordered and a state of emergency was proclaimed, the approximate strength in the various areas (the distribution of troops being as given previously) and the distribution of medical units was as follows:—

Approximate strengths including volunteer units and 28th Indian Brigade at Ipoh which was ordered up to 11th Indian Division on commencement of operations

11th Indian Division area	..	.. 20,000
9th Indian Division area	Kelantan	.. 10,000
	Kuantan	.. 8,000
Penang Fortress	..	.. 3,000
L of C area ..	..	.. 15,000
Total		.. 56,000

Distribution of Medical Units

11th Indian Division area		
36 Ind Fd Amb	..	.. Ipoh
28 Ind Fd Amb	..	.. Sungei Patani
16 Ind Fd Amb	..	.. Tanjong Pau
13 Ind Fd Hyg Sect	..	.. Sungei Patani
6 Anti-malaria Unit	..	.. Tanjong Pau
5 MAS	..	.. Bedong
10 Ind Staging Sect	..	.. Kroh
9th Indian Division Area		
15 Ind Fd Amb	..	.. Kota Bharu
MAS (25 cars)	..	..
5 Anti-malaria unit		
10 Ind Fd Hyg Sect (1 sub-sect)		

On 1 December, two sections of 19 IGH were warned to be ready to proceed with a surgical team and equipment to Kuala Krai by rail when required. The hospitals at Kuala Krai and Kuala Lepis were instructed to evacuate their patients to Singapore and No. 5 Indian CCS at Bedong, which had been acting as a stationary hospital, was ordered to evacuate all its patients and act as a CCS. The RAF (Medical Service) was responsible for all casualties on the aerodromes but hospital accommodation and evacuation was under control of III Indian Corps. On 6 December, First Degree of readiness was ordered at 1515 hours. By this time it had been decided that in the event of operations, L of C would not be able to carry out satisfactorily its double role and that the ADMS L of C should be attached to HQ III Indian Corps which would take over administration and operational control of all L of C medical units. On 8 December, an immediate request was made to HQ Malaya Command for two additional ambulance trains and for mobile surgical teams for No. 5 Indian CCS and the Section 12 IGH located at Kuala Krai. The two ambulance trains were not available, however, for some days; the first being ready to function on 12 December and the second on 16 December.

HEALTH OF THE FORCE

During the preoperational period (1941), the health of the troops in III Indian Corps area was most satisfactory. 'Constantly sick' figures for both British and Indian troops were usually below that expected in India. This was rather surprising in view of the fact that so many of the troops were located in rubber plantations in depressing and enervating surroundings and in a highly malarious country. But troops living under these conditions, especially when combined with the motor transport, soon became soft as there was little time for the toughening training of jungle warfare. The incidence of malaria was also astonishingly low and most fresh infections could be traced either to a period of training or to the occupation of outposts. The siting of camps in Northern Area by the original force had been well done. One camp (Wardieburn, Kuala Lumpur) which was occupied for strategical reasons against medical advice, as it was considered impossible to control it satisfactorily, rapidly produced over 100 fresh infections and had eventually to be closed. The preliminary anti-malarial work in the areas in which camps were sited was carried out most efficiently by the Malayan Medical Services. For the month of September 1941 the malaria ratio per 1,000 per year was British 34.28, Indian 36.15, AIF 72.00. In July, in the 9th Indian Division at Kelantan, fresh infections rose from 27 in June to 57 in July—the population at risk being approximately 2600. In the 11th Indian Division at Kedah, 32 fresh infections occurred in July—the population at risk being approximately 10,000. In South Johore 91 cases occurred. Most cases of malaria in Indian troops came from Kelantan and Pahang. For venereal diseases the recognised preventive measures were in force—propaganda and 'ablution centres'—but venereal disease in the country was rife and temptations were many. The incidence was therefore high. A large

number of cases were invalided with the diagnosis 'Bronchial asthma'. These cases occurred almost entirely amongst the Indian troops, and were attributed to prolonged residence in rubber plantations. This theory had a certain amount of support from the experience of civil medical authorities. Indolent sores were almost entirely limited in distribution to the lower limb below the knee and resembled cutaneous leishmaniasis. They were the cause at one time of much disability amongst troops on the east coast and occurred mainly amongst those working on beach defences barefooted. Wearing boots and putties, or trousers, caused a marked diminution in the number of the cases, but the actual cause was not discovered. The sores were very resistant to treatment, generally requiring prolonged hospitalisation. No information regarding this condition could be obtained from the civil medical sources. A certain number of typhus cases occurred mostly amongst troops on the east coast. The cases were moderately severe and took about six months to get fit again. However, no fatal case was reported. Cases of leptospirosis Icterohaemorrhagica were rare. A number of cases of leprosy occurred chiefly of the anaesthetic type. The disease is endemic in the country but the cases were mostly those which would well have been infected in India. Several cases of diphtheria occurred in a British battalion in Kedah. They were of moderate severity and were treated in the civil hospital, Penang. The disease is endemic in the local population and a number of cases occurred afterwards amongst the troops in POW camps. Skin diseases caused few admissions to the hospitals. The sick wastage in camps and barracks was very high in some units until strict hygiene discipline was enforced. 'Singapore ear and foot' and body ringworm were the main types of skin ailments.

RATIONS

The rations of both Indian and British troops appeared elaborate and excessive. In some camps, where few facilities existed for obtaining meals outside, as much as two to four tons of swill had to be disposed of daily after local contractors had taken all they could use. Yet in training for jungle warfare troops should learn to live on a simple diet, easy to issue, easy to carry, and easy to cook.

CLOTHING

Shorts were not found suitable for work in the jungle, as there must be protection from Lalang, leeches and thorns. Slacks and long sleeved shirts capable of being fastened at the ankles and wrists are best and boots should be light. A good type of waterproof cape is essential and great coats are unnecessary.

ARRIVAL OF THE AIF REINFORCEMENTS IN MALAYA

HQ 8th Australian Division arrived in February 1941 and was established at Kuala Lumpur. On 18 February, the 22nd Australian Infantry Brigade group also arrived and moved to the Seremban—

Port Dickson area. It was accompanied by the following medical units:— 2/9 Field Ambulance located at Seremban—Port Dickson and 2/5 Field Hygiene Section, 2/4 CCS and one Section MAC (with medical wing) located at Kajang. 2/10 Australian General Hospital (400 beds; later increased in June to 600) was located at Malacca, as also 2 Australian Bacteriological Laboratory, one detachment Advance medical stores depot and dental units. The siting of the general hospital at Malacca was decided by the Malaya Command and had the disadvantage that the Port of Malacca was unsuited for evacuation by sea. The role of this force was that of mobile reserve to Malaya Command and opened at Tanjong Bruas Camp, Malacca in May. It was followed in August by the 27th Australian Infantry Brigade group with 2/10 Field Ambulance and four Dental units. In September, 2/13 Australian General Hospital arrived and was temporarily located at St. Patricks School, Singapore, until accommodation was ready for it in Johore. In the beginning the troops were accommodated in permanent buildings but later were moved to hutted camps in semi-deployment areas. In July the role of the force was altered to that of fixed Defence Force for Johore and Malacca, and on 28 August 1941 responsibility for the defence of Johore and Malacca passed to the Commander AIF. The 22nd Australian Infantry Brigade then moved to Mersing with 2/9 Field Ambulance which unit constructed there an ADS for 600 cases with underground dressing station and operating room which proved to be of little value in the days to come. In September 1941, the 8th Australian Division HQ staff realised that it would not be able to control all base units as well as the Field troops. An Administrative HQ was, therefore, formed for this purpose with a medical director for the base organisation.

Troops and medical units of the AIF in December 1941 were located as follows:

8th Australian Division	GOC Maj. Gen. Gordon Bennet
22nd Australian Infantry Brigade Group	.. Mersing
27th Australian Infantry Brigade	.. Malacca and West Johore
Group attached forces	
Johore Military Forces	
Johore Volunteer Forces	
Johore Volunteer Engineers (European).	

Medical Units

2/9 Field Ambulance with 22nd Brigade (AIF)	..	Kota Tinggi
2/10 Field Ambulance with 27th Brigade (AIF)	..	Kahang
Mengkibol Est.	..	Kluang
2/10 Australian General Hospital 600 beds	..	Malacca
2 Australian Mobile Bacteriological Laboratory		
3 Advance Medical Stores Depot		
2 Australian Convalescent Depot	..	Tanjong Bruas
2/13 Australian General Hospital	..	Johore Bahru
2/2 MAC	..	Tanpoi Est.
2/5 Field Hygiene Section	..	Kota Tinggi
2/3 MAC was under command III Indian Corps at Ipoh.		

On the eve of the operations, therefore the AIF was a very complete, well equipped and self contained force in the matter of its medical units.

HEALTH OF AUSTRALIAN TROOPS

In June, 186 AIF invalids were evacuated to Australia. In August, AIF reinforcements arrived with 83 cases of mumps and No. 2 British Convalescent Depot opened at Telok Paku to deal with them. By the end of the month there were 425 cases. In September the malaria ratio per 1,000 per year for this month was 72·00 almost double the rate for British or Indian troops. This followed a period of training in Negri Sembilan. Until acclimatised the troops suffered rather badly from skin infections.

CHAPTER IV

Operations in Malaya

(8 DECEMBER 1941—15 FEBRUARY 1942)

The Malayan campaign had as its object the defence of the naval base and the air bases at Singapore. Changing conditions called for alterations of the plan as to how this was to be done. The much greater range of modern aircraft, the fact that no fleet would be available for the protection of the sea approaches and the fall of France in 1940, which opened up a base at relatively close range to hostile forces were among the new factors which had to be taken into consideration. It was finally decided that defence must primarily be dependent on a strong air force capable of attacking and destroying an enemy at sea, that there must be adequate land forces to protect the aerodromes and deny a landing to the hostile forces and that the whole of the Malayan peninsula must be held to give full protection. Estimates of the land and air forces required for this purpose were made but unfortunately when operations commenced the forces available were far short of the requirements. The air build up was too slow, only three fighter squadrons and about 150 machines all told—most of them obsolete types—being available when operations commenced. The land forces also fell short of the requirements and, owing to the heavy withdrawal from units of experienced officers and trained men which had taken place both in India and afterwards in Malaya, were, with certain exceptions, composed only of partly trained and inexperienced troops. There was the further difficulty as well that the aerodromes had mostly been sited only with a view to their suitability for air action and not from the point of view of their security.

The original role for the land forces was a purely defensive one viz., to deny landings on the east coast and stop any hostile thrust from Thailand. Later a forward policy was planned known as operation 'Matador'. The general outline of this plan was to forestall the Japanese at Singora, in Thailand, and prevent their landings there and to advance from Kroh to a defensive position known as the 'Ledge' on the Kroh-Patani road, some 35 to 40 miles inside Thailand, to deal with any advance from the other port in Thailand—Patani. The introduction of this plan which was only partially put into effect had a great bearing on subsequent events. Owing to bad weather and poor visibility contact was not kept with the main invasion forces, after being first sighted on 6 December 1941, and orders for operation 'Matador' were delayed until too late to put them into effect. The change from an offensive role for the 11th Indian Division for which it had been energetically preparing and in anticipation of which preparatory moves had been carried out within the Division, to a purely defensive one, had a bad psychological effect on the morale of the troops which could not improve even when they saw their aerodromes being rapidly bombed out of commission and the Japanese tanks appearing on

their front. On the Kroh front, where orders were rather belatedly received to advance into Thailand, active opposition was met with from the Thais and when, after reinforcements were received, progress was made to the position known as the 'Ledge' it was only to find it occupied by the Japanese. Heavy fighting took place but after the arrival of Japanese tanks the force had to retire. In the Kedah front the troops found themselves in positions not fully prepared as work on them had been curtailed in preparing for an offensive role. Hence they laboured night and day in pouring rain and the warm enervating atmosphere of rubber plantations to complete the defences, and when the Japanese attacked they were without effective aircraft and without tanks or adequate anti-tank weapons. Thus, between the Japanese tanks and their bold encircling movements they suffered heavy losses. The feeding arrangements of the Indian troops broke down and the men became weak from hunger and strain. Much transport and equipment was lost, partly by Japanese action and partly by the premature explosion of demolitions cutting it off on the wrong side.

A withdrawal was ordered after five days to the next position at Gurun but the troops were insufficient in number, badly shaken and desperately tired. From this position after heavy Japanese attacks with tanks and air support they were forced to withdraw ultimately behind the river Muda. The 11th Indian Division was in no state to make a stand there and, as indications were available that the Japanese were making a strong attack from the Kroh direction to cut off all the troops in Kedah and Province Wellesley, Penang was evacuated and the withdrawal continued to the Krian river. Further withdrawals were forced by the Japanese control of the air enabling them to make flanking attacks in the rear down the west coast by sea threatening communications and by their tank attacks and enveloping movements. Other fronts at Kelantan and Kuantan were also forced to conform—as were the Australians later under threat of being cut off—until eventually after eight weeks of fighting all troops were withdrawn to Singapore Island, where the end came quickly after the Japanese had effected a landing in the Australian sector.

Although, as may be appreciated from the foregoing account, the actual operations in Malaya were of short duration, yet they presented many medical problems and threw a great strain on all the medical units by the rapid movement over a large area of country with consequent rearrangement of medical plans constantly. The strain of continuous fighting by day, moving or working by night—more often than not in pouring rain—and above all the lack of sleep had their effect on the troops. Added to this there was the persistent unopposed Japanese air activity with low bombing and machine gunning of the roads and bivouacks, almost always resulting in a toll of casualties even if mostly small in number.

As the majority of the troops were only partially trained and inexperienced the importance of this factor must always be kept in mind. All had their share of this unwelcome Japanese air attention, some more than others, but ambulance personnel—particularly of the ADSs and

the ambulance drivers, including those of the MASs and MACs,—who were on the road by day and night, often on lonely stretches with no protection and liable to be shot up by infiltrating parties of the Japanese received a very full share of the hostile attention and deserve special mention for their work under such conditions. That the chain of evacuation was never interrupted or broken is something of which they may well be proud of.

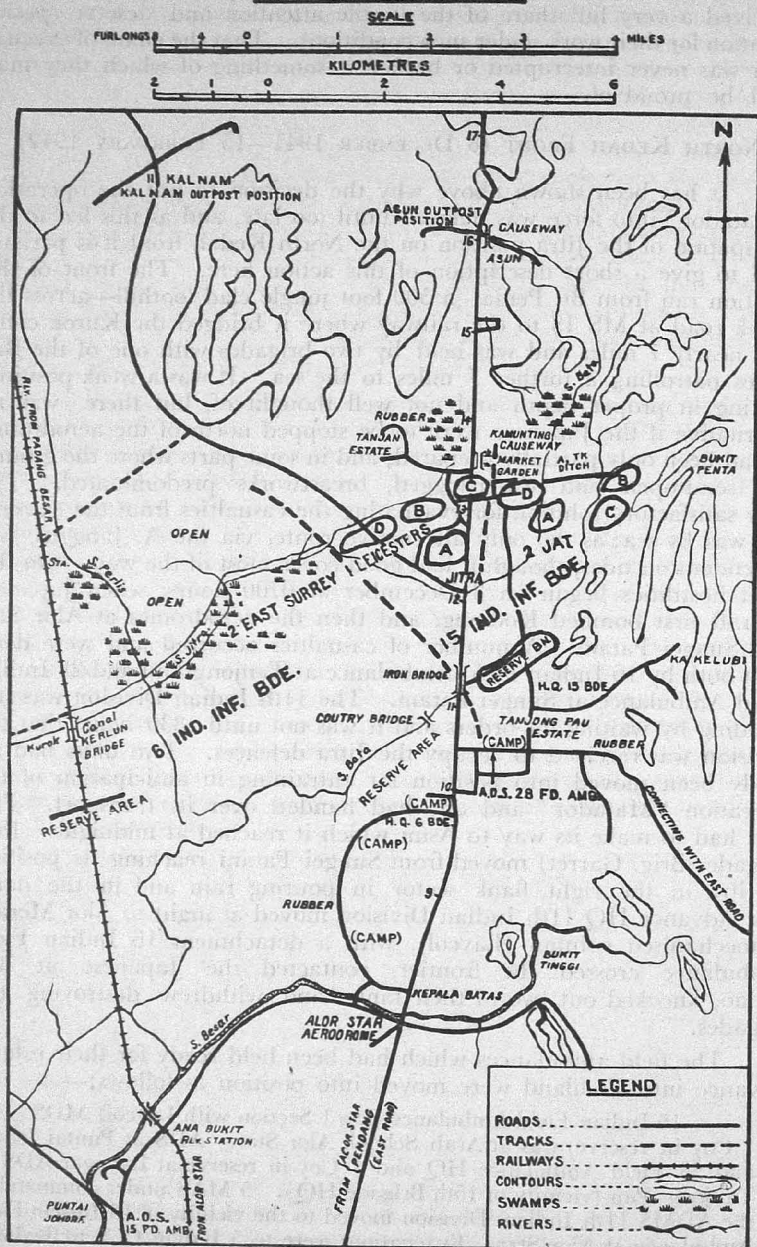
NORTH KEDAH FRONT (8 DECEMBER 1941—15 FEBRUARY 1942)

It has been shown above why the decision to put the operation 'Matador' into force was delayed until too late, and as this led to the occupation of the Jitra position on the North Kedah front it is perhaps well to give a short description of this action here. The front of this position ran from Bt. Penia—a 500 foot jungle clad foothill—across the trunk road at MS 13 to the railway where it bridged the Kurok canal i.e., nearly 7 miles and was held by two brigades with one of the Brigades patrolling a further 7 miles to the sea. It was a weak position, lacking in proper depth and not well thought of, but there was no alternative if the Japanese were to be stopped north of the aerodrome. It had been only partially prepared, and in some parts where the ground was semi-open and water-logged, breastworks predominated. The only satisfactory solution for evacuating the casualties from the extreme left was by sea; as the only alternative route, via the A. Janggus, was dependent on tides, though it had good cover most of the way. On this front hostilities began on 8 December at 0700 hours, when Japanese aircraft first bombed Kodiang, and then the aerodromes at Alor Star and Sungei Patani. A number of casualties occurred and were dealt with both by 16 Indian Field Ambulance at Tanjong Pau and 28 Indian Field Ambulance at Sungei Patani. The 11th Indian Division was still standing by waiting for orders and it was not until 1330 hours that the decision was received to occupy the Jitra defences. Two units had already been moved into position for entraining in anticipation of the operation 'Matador' and one had handed over its transport. This unit had to make its way to Asun which it reached at midnight. 15th Brigade (Brig. Garret) moved from Sungei Patani reaching its position at Jitra in the right flank sector in pouring rain and in the dark. The Advance HQ 11th Indian Division moved at night to Alor Merah. A mechanised column (Laycol), with a detachment 16 Indian Field Ambulance crossed the frontier, contacted the Japanese at Ban Sadao, knocked out two of their tanks and withdrew destroying the brigades.

The field ambulances which had been held ready for their role in advance into Thailand were moved into position as follows:—

16 Indian Field Ambulance (less 1 Section with Laycol) MDS (with 1 Coy in reserve) was at Arab School, Alor Star. ADS at Puntai Johore and 28 Field Ambulance HQ and 1 Coy in reserve at Langgar ADS at Tanjong Pau (vicinity of 15th Brigade HQ). 5 MAS under command of the ADMS 11th Indian Division moved to the vicinity of 16 Indian Field Ambulance at Alor Star. Evacuations were to 5 Indian CCS at Bedong. Ambulance railhead was at Bedong.

MALAYA JITRA POSITION



Next day contact was not made with the Japanese as their advance had been delayed and the troops worked in pouring rain to get the defences improved. Car posts were put out by both field ambulances with the advanced troops and the Section 16 Indian Field Ambulance which had been with Laycol returned to its unit. The 28th Indian Infantry Brigade (less 1 Bn) came into Divisional reserve at Alor Star aerodrome with 1 Coy 36 Indian Field Ambulance at Sungei Patani.

The following day skirmishes with the Japanese occurred resulting in a small number of casualties, all of which were quickly dealt with. All the cars of both Field ambulances were working at Tanjong Pau while the cars of 6 MAS worked to Puntai Johore. On 11 December the division suffered a disaster when a Battalion (1/14 Punjab) encountered the first Japanese armoured 'blitz' during a storm at the critical moment of its withdrawal north of Asun. Later it swept through 2/1 Gurkha Rifles thus scattering and half destroying both battalions. In the dark and rain the survivors mostly without their officers, made wide detours in attempting to get back to the Jitra line or got lost only to be rounded up next day. Others immediately ran into the Japanese on the road and were captured and few of the wounded could have been recovered from this engagement. Later, on the Perlis road, a demolition was prematurely exploded cutting off an outpost and covering troops with their guns, transport and lorries. One car post of 16 Indian Field Ambulance was lost but the personnel was eventually able to get back. This armoured drive brought the Japanese to the Jitra position.

THE BATTLE OF JITRA

On the night of 11/12 December, the battle of Jitra began and was fought mainly on the 15th Brigade sector. From the medical point of view this was fortunate. The evacuation of wounded from this sector presented rather less of a problem than it did from the other. Shortly after midnight the Japanese attacked on the front of the Jats and Leicesters and at dawn in a heavy frontal attack penetrated deep into the Jat area causing a subsequent readjustment of the line. During the course of the day, as the situation appeared to be deteriorating, it was decided to send 13 Indian Field Hygiene Section (which had no transport) and the anti-malaria unit back to Sungei Patani. 5 Indian CCS (Heavy Section) and 8 Advance Medical Stores Depot were also ordered at this time, by III Indian Corps, to move to Bagan Serai and open there on arrival—the Light Section 5 Indian CCS remaining at Bedong. The Heavy Section 5 Indian CCS minus the bulk of its personnel for which sufficient road or rail transport had not been provided was however sent, in error, to Ipoh. In the meantime further readjustments of the line had to be made (during which the medical officer of the Leicesters was killed) and later the road south of Jitra came under close range Japanese fire, and with the heavy traffic on it confusion developed. The ADS of 28 Indian Field Ambulance was now almost in the battle line and ambulance cars had difficulty in getting along the congested roads. Divisional orders were delayed, and in many cases did not reach their destination. Some units, or parts of them, withdrew, some withdrew

across country because they could not use the only road, and some made their way to the coast from where they took boats south whilst others were still in position on the next day. Owing to the confused nature of the fighting and the large number of missing, the numbers of those actually captured, killed or wounded will never be correctly estimated especially as the ground fought over was not again accessible. It is probable, therefore, that for the most part, only wounded able to make their way to transport and wounded in the vicinity of transport were recovered, though both field ambulances worked unsparingly with their cars and stretcher bearers well forward in the line.

On withdrawal the plan was for the 28th Indian Infantry Brigade (reconstituted) and with one battalion of the 15th Brigade to hold positions at Langgar and the south bank of the Kedah river at Alor Star while the 6th Brigade took up a position at Simpang Ampat, 7 miles further back. 28 Indian Field Ambulance was, therefore, ordered to withdraw and establish an ADS one mile south of Alor Star bridge and a MDS (1 Coy in reserve) at Waterfall (vicinity of 15th Bde HQ); but it was not until just before dawn that the ADS from Jangong Pau crossed the Kedah River owing to traffic congestion and delay in receiving the orders. The HQ and the remainder of the Field Ambulance crossed at 1300 hours. 16 Field Ambulance on withdrawal opened an ADS at Guar Chempedak, an ADS at Kota Sarang Semut and MDS at Sungei Patani rubber estate Group Hospital (main road 3 miles north of Sungei Patani) and light section MDS at Alor Star which closed at midnight to rejoin its unit. The Advance HQ 11th Indian Division moved to Pendang area. At dawn on 13 December only three Coys of the 28th Indian Infantry Brigade were in position south of the Kedah river with 1 Coy at Langgar. During the day elements of units continued to fight and find their way out of the Jitra line. The 15th Brigade was now about 600 strong and temporarily unfit for further fighting while the 6th Brigade had also suffered serious losses and of the 28th Brigade 2/1 GR (except for one Coy) was almost wiped out; 2/2 GR and 2/9 GR had suffered about 100 casualties between them. It was now imperative to get the light section 5 Indian CCS away from Bedong and it was evacuated by road to Bagan Serai where it opened on 14 December for two days. During this move, evacuation of casualties had to be by road by cars of the MAC to the civil hospital Taiping. This involved a journey of almost 100 miles. The position of the divisional medical units during the day was as given in the orders for withdrawal on the night of 12 December, but during the following night all troops of the 11th Indian Division were withdrawn to the Gurun position and dawn of 14 December saw the field ambulances in new positions. The Advance HQ 11th Division withdrew to Harvard estate and Sungei Patani.

THE BATTLE OF GURUN

By 14 December, the 28th Brigade was in position on the right of the Gurun line with the 6th Brigade on the left. The position though relatively a good one had not been prepared. It lay astride the railway

and road just north of Kedah peak. The disposition of the field ambulances was now as follows:

Field Ambulance ADS at estate hospital Bedong on the main road. MDS and the remainder of the field ambulance at the Group Hospital, north of Sungei Patani. 28 Indian Field Ambulance detachment and car posts at Waterfall estate— and the remainder at camp hospital Sungei Patani.

By noon the Japanese, with tanks and air support, were in contact with the 6th Brigade sector and heavy fighting ensued. It had now also been realised by this time that the Japanese threat on the Kroh front was far greater than had been anticipated and in view of the situation III Indian Corps decided to evacuate 27 IGH from Penang to Seremban all sick and casualties in hospital being sent to Tanjong Malim, ambulance railhead being at Prai for this move which was carried out on the night of 14 December. The anti-malaria unit, 13 Indian Field Hygiene Section and the Staging Sections were all moved also during the day to Taiping. During the night the road front collapsed at Gurun, the out-numbered and tired troops being unable to cope with the night attacks. In the early hours of the morning of 15 December, the main road Coy 1/8 Punjab, HQ East Surreys and HQ 6th Indian Infantry Brigade were all wiped out. HQ and remnants of 1/8 Punjab were cut off and had to make their way to the sea. The 15th Indian Infantry Brigade consisting only of small parties of Leicester, Jats and several detachments, after heavy Japanese shelling, was withdrawn to Sungei Lalang. The Japanese were soon pressing eastward from Gurun against the 28th Indian Infantry Brigade and the Commander 11th Indian Division unwilling to get his only remaining brigade perhaps inextricably involved, now ordered withdrawal by stages to the Sungei Patani river line and moved Advance HQ 11th Indian Division to Kepala Batas. 16 Indian Field Ambulance leaving car posts with brigades and an ADS at Sungei Patani camp moved to Kepala Batas where it opened a MDS. Evacuation from 16 Indian Field Ambulance was carried out by cars of 28 Indian Field Ambulance and 5 MAS. 28 Indian Field Ambulance opened a MDS at Butterworth which functioned as a CCS, the remainder of the unit proceeding to Bt. Mertajam in reserve and cars of 2/3 MAC (AIF) evacuated casualties from this field ambulance to Taiping which was now the ambulance railhead for 17 CCS at Tanjong Malim. By 16 December, the 11th Indian Division was south of the River Muda and was being reformed under cover of a weak rearguard at the railway bridge and the two main bridges over the river. 16 Indian Field Ambulance leaving an ADS at Kepala Batas and a light section ADS at Bumbong Lime (vicinity of main road bridge) under command of the rearguard, moved to the vicinity of Simpang Ampat (south of Bt. Mertajam) where it opened a MDS while 28 Indian Field Ambulance withdrew to Taiping where it functioned as a CCS and met local requirements opening an ADS at Kamunting to attend to stragglers.

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THE KRIAN RIVER FRONT

The 28th Indian Infantry Brigade was moved back by road and rail to Simpang Lima to take up a line behind the Krian river from

Nibong Tebal to the sea whilst the 12th Brigade on its right flank fought a rearguard action from Batu Pekaka bridge to the Terap-Selama area and the 6th and 15th Brigades were withdrawn to Taiping area in reserve to the Krian river defences. By 18 December all troops were south of the River Krian. The HQ 11th Indian Division moved from Bt. Mertajam to Taiping the railway station and divisional car park being bombed just before leaving and several vehicles destroyed and set on fire. Casualties were, however, few though the Japanese remained very active in the air throughout the day. 16 Indian Field Ambulance opened an ADS at Simpang Lima and one at Kuala Kangsar and a MDS at cross roads 4 miles south of Taiping.

This withdrawal of the line now made it necessary to move 20 CGH at Taiping which had evacuated all its patients (some 600) on two ambulance trains to Tanjong Malim and Singapore on 15 December and had packed up ready to move. The surgical team and four nursing sisters proceeded to the civil hospital Seremban for duty and the hospital left in the early hours of the morning of 17 December for Kajang where a suitable location for reopening it had been selected. It was accompanied by No. 8 Medical Stores Depot which had arrived in Taiping from Bedong and been attached to the hospital. The light section 5 Indian CCS moved into the buildings vacated by 20 CGH but left the same night (17th) for Batu Gajah.

On the night of 16/17 December, the evacuation of Penang which had been heavily bombed on 12/13 December and suffered enormous casualties (1,000 killed 3,000 wounded) amongst the civil population, was completed. The civil administration had broken down, the conservancy services had been in abeyance for several days and the water catchment area fouled. Most of the troops were moved to the mainland, the Coy of 18 Indian Field Ambulance joining its parent unit at Ipoh on evacuation from Penang. The orders for the evacuation of 27 IGH at Penang on 14 December failed to get through but fortunately the Fortress Commander on his own initiative ordered the move of personnel and patients to the mainland that night. He spoke very highly of the work of Lt. Col. Malhotra who commandeered transport and moved all patients, medical and surgical equipment and supplies of the unit to the docks. The vehicles were driven by the personnel of the unit and eventually all were safely transferred to a train at Prai and conveyed to Seremban.

As the moves of these two hospitals (20 CGH and 27 IGH) were causing a shortage of hospital accommodation in III Corps area it was arranged, in accordance with previous agreement, that 400 beds (100 British 300 Indian) should be taken over at the civil hospital Seremban which had evacuated the majority of its patients at the beginning of hostilities and was almost empty. A staff consisting of clerks, QM and nursing personnel and a Registrar was found from 27 IGH and posted there for duty, the surgical team and nursing sisters being found from 20 CGH. Additional beds and bedding were asked for from Malaya Command. To a great extent this temporarily eased the hospital situation, for till then the remaining sections of 19 IGH (600 beds)

were functioning and all Indian cases not requiring surgical treatment or expert nursing were being sent there to relieve pressure on the other hospitals in III Corps area which were fully employed with acute surgical cases. The surgical team and equipment of this hospital (19 IGH) had been sent to Jerantut and it had not the necessary nursing staff for serious cases, so with the evacuation of the Fixed Reinforcement Camp from Penang and pending its reopening at Mantin, the duties of this unit were carried out by 19 IGH. The arrangement worked well and was responsible for the return of considerable numbers when the Reinforcement Camp was again functioning. Many of the troops who had been cut off during operations eventually rejoined but most of them in an exhausted condition and suffering from injuries, minor ailments and lack of food. In the absence of Stragglers Posts, these had been evacuated by field ambulances as they were in no condition to rejoin their units immediately. It was for such cases that 19 IGH was then mainly working. During this time (17, 18 and 19 December) there was marked Japanese air activity and 25 Indian Field Ambulance attended to many civil casualties in addition to a number of casualties amongst the troops. Meanwhile unopposed air activity had increased and until the end of the month was directed mostly against troops in bivouack and transport on the road.

The civil arrangements in Taiping also ceased to function by 20 December and the sanitary services had broken down. Up to this time Field Ambulance had been salvaging medical stores from abandoned civil and estate hospitals and completing their own requirements to capacity from these sources. Malaya Command, however, issued orders to salvage all medical and surgical equipment and medical stores from civil sources and despatch them to Singapore as it had been found that immediately civil hospitals were deserted and troops began to move out of the area, looting of all hospital stores and supplies commenced by the civil population. One month's normal medical supplies were alone left in each hospital. Large stocks of Atebrin were held in most of these hospitals and some two million tablets were recovered and sent to Singapore by the consultant Malariologist. 30 Indian Field Ambulance alone acquired 150,000 tablets of Atebrin at Baling estate hospital on 14 December. Unfortunately, large amounts of the salvaged stores were subsequently lost. All the valuable surgical and medical equipment and medical stores salvaged at Taiping and later at Ipoh were loaded on railway wagons which were attached to an ammunition train. This train was bombed and set on fire, with the consequent loss of all the medical equipment.

13 Indian Field Hygiene Section and the anti-malaria unit were evacuated out of the 11th Division operational area to Kuala Lumpur under III Corps and the Indian Staging Section whose equipment had been destroyed by the Japanese bombing on the railway at Batu Gajah was sent to Seremban where its staff was attached to 27 IGH. On 18 December, 5 Indian CCS opened at the civil hospital Batu Gajah which had been abandoned by the civil staff. The DDMS III Corps then decided to clear all the equipment of the heavy Section of the CCS to Singapore by rail as this unit was likely to function henceforth in the buildings of

civil hospitals and transport by road of the equipment of this Section was becoming increasingly difficult owing to frequent moves at short notice. He considered that the equipment of the light section 5 CCS plus that found in civil hospitals would in future be sufficient for all commitments of the unit. The loading of ambulance trains at this place was slowed up badly by the absence of ramps which were too bulky to move during the retirement from those stations which had them and by the fact that loading had to be done at night in complete blackout. Owing to Japanese bombing it was no easy matter to get the trains up to the CCS.

Meanwhile, re-adjustment of units and brigades of the 11th Indian Division was decided upon and took effect a few days later at Ipoh. The 6th and 15th Indian Infantry Brigades owing to their heavy losses, were to be amalgamated as 6/15 Indian Infantry Brigade, the Surreys and Leicesters were to become the British battalion and the 12th Brigade with 36 Indian Field Ambulance was to be incorporated in the Division. Although the Indian troops had been dismayed and rather bewildered to find that they had no tanks and that the Japanese had complete control in the air their morale was not broken in spite of the strain they had been under through lack of rest and proper meals. The burning of abandoned aerodromes and the sound of the demolitions in the rear had a depressing effect, but most of all the troops suffered from want of proper rest and sleep. The opportunity a little later of a few days comparative rest and a chance to reorganise effected a great change.

During 19 and 20 December, the 28th Brigade to avoid being outflanked on its right withdrew as rear guard to the line Ulu Sapetang—Bagan Serai with the light section ADS 16 Indian Field Ambulance whilst the 12th Brigade on the right was in action on the Grik road. The dispositions of 16 and 28 Indian Field Ambulances remained unaltered. On 21 December, all troops west of the Perak river including those on the Grik road came directly under the Commander, 11th Indian Division. On 21 December, 16 Indian Field Ambulance took over from 28 Indian Field Ambulance and the ADS at Kamunting (closing it later in the day) and opened a light section ADS at Sungai Siput for the troops (4/19 Hyderabad) guarding the railway bridge there. This ADS was taken over by 36 Indian Field Ambulance next day which moved its MDS to Daventry estate, 14 miles north of Ipoh, leaving its light section ADS still open at Kuala Kangsar. 28 Indian Field Ambulance withdrew to Ipoh where it took over a clearing station in the civil hospital from 18 Indian Field Ambulance which had been left at Ipoh as Corps reserve by the 12th Brigade on its way to the Kroh front.

The situation on the Grik road where the 12th Brigade was being forced back towards Lawin on the main trunk road compelled the 28th Indian Infantry Brigade to withdraw from positions at Ulu Sapetang—Bagan Serai at 2000 hours on 21 December, the troops being disposed as far as possible to meet all threats and to cover the ultimate withdrawal of the 12th Indian Brigade and also the bridge at Blanja, as the approach via Chenderok lake gave the Japanese an opportunity of bypassing Kuala

Kangsar and threatening the road and railway bridges and communications east of the Perak river. 16 Indian Field Ambulance opened an ADS at Blanja, while still maintaining the ADS at Kuala Kangsar. By the morning of 23 December all troops except for the bridgehead at Blanja were east of the river. The 12th Indian Brigade was bivouacked in Salak North area and the 28th Indian Infantry Brigade was concentrated in the Siputeh area. 16 Indian Field Ambulance opened an ADS at Pusing road and withdrew the ADS at Blanja and Kuala Kangsar. The MDS was established at the civil hospital Batu Ganjah but moved east next day to the main South Road junction. Evacuations were to 5 CCS at civil hospital Sungkai.

The period 8 to 23 December saw both the Kroh and Kelantan fronts also involved in operations and, as events on each front had repercussions on the other fronts, it is necessary to turn and view the course of events during this period on these two fronts as the general situation had begun to affect the medical policy of retaining all casualties in the hospitals on the mainland, and the possibility of further withdrawal soon called for its drastic revision.

THE KROH FRONT

In connection with the operation known as 'Matador' part of the plan was for a column (Krohcol) to advance from Kroh to a defensive position known as the 'Ledge' an important strategical hillside on the west side of the Patani river, 35-40 miles on the Thailand side of the frontier. This column was to consist of:—

3/16 Punjab Regt, 5/14 Punjab Regt (from Penang), 1 Coy S and M, 1 Light Battery FMSVF (replaced by 10 Mountain Battery from the Kedah front), 36 Field Ambulance (less 1 Coy) 1 Section 2/3 MAC (AIF), and Detachment 2/3 Australian reserve MT.

But 5/14 Punjab Regt did not arrive before operations commenced and 36 Indian Field Ambulance was only moved up from Ipoh on 8 December arriving in the early hours of 9 December. One Section 2/3 MAC (AIF) was also sent with it by III Indian Corps responsible for the medical arrangements on this front. Although Krohcol was at this stage under command of the 11th Indian Division, it had been decided by the DDMS III Corps that, as he had the necessary medical units to cover this front, it would be more satisfactory to keep them under his control as there was every indication that operation 'Matador' would be put into effect and that the ADMS 11th Indian Division would be advancing with that formation into Thailand from Kedah. 36 Indian Field Ambulance, which was attached to the 28th Brigade, only moved up from Ipoh when that brigade joined the 11th Indian Division and was then put under command of Krohcol on arrival. The Officer Commanding 36 Indian Field Ambulance had previously reconnoitred this front and worked out the role of the field ambulance, one Company of which was detailed to the 28th Indian Infantry Brigade for duty with the battalion allotted for anti-paratroop and aerodrome protection—the Kedah L of C. This Company was sent to Sungei Patani where it arrived

9 December and established itself in the camp hospital there under command of the 11th Indian Division. On 8 December, orders were received at 1330 hours by Commander Krohcol to occupy the 'Ledge' but as the column crossed the frontier at 1500 hours unexpected resistance was met with from the Thais who, it had been hoped, would at worst be passively resistant. By nightfall only three miles had been covered and the column halted for the night. Early next day the advance continued and as the leading troops approached Betong in the afternoon all opposition ceased and the column took up positions for the night. 35 Indian Field Ambulance, immediately on arrival, established a L/S ADS at the RAP 3/16 Punjab Regt. and a MDS at Kroh. Evacuation was by 3/3 MAC to 5 Indian CCS at Bedong (some 60 miles over tortuous hill roads). At first light on 10 December, Krohcol moved towards the 'Ledge' but 4 miles short of its objective came under fire from the Japanese advanced guard. The column advanced rapidly for half a mile but was then stopped and an encounter took place with heavy fighting and casualties on both sides until the issue was settled by the surprise arrival of Japanese tanks. 3/16 Punjab had fought splendidly. 5/14 Punjab and 10 Mountain Battery had now arrived in Kroh and were ordered up to 10 miles north of Betong. One Section 36 Indian Field Ambulance accompanied the column and opened a light section ADS 6 miles north of Betong with two ambulance cars forward at RAP of 3/16 Punjab Regt. Japanese attacks continued throughout 11 December supported by tanks and dive bombers on forward troops who repulsed them inflicting heavy losses, but 3/16 Punjab lost over 200 men, and ambulance cars were kept busy up and down the road. A report was afterwards made to the 11th Indian Division that 'the Indian Stretcher Bearers of 36 Indian Field Ambulance and the Australian ambulance drivers carried out sterling work in which their respective commanders played a conspicuous part in the evacuation of casualties from the RAP. The medical officer 3/16 Punjab who had been under severe strain, was relieved by an officer from the field ambulance who did excellent work during the next two weeks. At this stage the officer commanding 36 Indian Field Ambulance considered it advisable to move two non-mobile medical units from Kroh—a Staging Section and a field hygiene section to Sungei Patani. On 12 December, 3/16 Punjab was forced back by Japanese flanking movements and it withdrew to Kroh through 5/14 Punjab who had taken up a defensive position 9 miles north of Betong. 3/16 Punjab had been in continuous action since 8 December against superior Japanese forces. They had inflicted heavy losses on the Japanese but this fine regiment had only 350 left.

The medical arrangements were as on 11 December,—light section ADS 5 miles north of Betong, MDS at Kroh: but evacuation was to Taiping owing to the move of 5 Indian CCS from Betong. All heavy equipment and spare personnel of 36 Field Ambulance were sent to Baling estate hospital. At midnight 12/13 December, Krohcol came under command of III Indian Corps. The Japanese attacked again at dawn on 13 December and their two Companies had been annihilated when enveloping movements round both the flanks forced the 5/14th Punjab with attached troops to fall back to Betong where in the afternoon they

embussed and by dusk the whole force was in occupation of a prepared position 2-3 miles north-west of Kroh. The light section ADS 36 Indian Field Ambulance now opened at Kroh defensive line and the MDS at Baling estate; the Coy at Sungei Patani left during the day for Titi Karangan to join its parent unit. On 14 December, the Commander 12th Brigade (now placed under command of the III Corps from Command reserve) took over command of Krohcol and moved it to Baling some 9 miles west of Kroh, Krohcol ceasing to exist as an independent force. This withdrawal to Baling left unprotected the jungle road through Klian Intan to Grik, and thence by the metalled road to Kuala Kangsar and Ipoh. To meet this threat, one Coy 2 Argylls and a Detachment FMSVF were ordered to Grik (via Kuala Kangsar). 2 Argylls at Baling were ordered back to Kupang. 36 Indian Field Ambulance moved to a rubber factory at Mount Joy estate (some 6 miles south of Titi Karangan) leaving a light section ADS at Kupang and was joined by the Coy from Sungei Patani. Evacuation of casualties was to Bagan Serai.

On 15 December, 5/2 Punjab was covering the bridges across the Muda river at K. Ketil and Bata Pekaka with 2 Argylls at Titi Karangan, where the light section ADS had opened. Next day the 12th Indian Infantry Brigade held positions north of Lunas, at which place there was a Coy of 18 Indian Field Ambulance which closed that night and moved to Taiping whilst the 12th Indian Infantry Brigade and 36 Indian Field Ambulance withdrew during the night to Selama. This move typical of so many made by all, in pouring rain and pitch dark night with no lights, was not made any the easier by finding that the bridge over the river Selama was 4 feet under water making a diversion by estate roads necessary until a bridge could be found over which the transport could pass. On 17 December, the 12th Indian Infantry Brigade was in harbour south of Selama and left at night with 36 Indian Field Ambulance for Taiping from where it moved next day to Kuala Kangsar. Here 36 Indian Field Ambulance established itself in the civil hospital which had been deserted. At night the 12th Indian Infantry Brigade moved up the Grik road to deal with the Japanese threat from that direction.

THE GRIK ROAD OPERATIONS

Near milestone 42 on the Grik road 2 Argylls was in position by 19 December sealing the exit from dense jungle beyond Kenering and the 5/2 Punjab in position south of lake Chenderok. 36 Indian Field Ambulance with the MDS at the civil hospital Kuala Kangsar opened a light section ADS at Kota Tampan for the Argylls and another light section ADS at Sauk for the 5/2 Punjab. Evacuation from the MDS was to Batu Gaja. On 20 and 21 December, heavy fighting took place and the Argylls withdrew from the Kota Tampan area through the 5/2 Punjab who were west of Chenderok lake. The Japanese at this time were only 12 miles from Lawin where the Grik road joins the trunk road. 36 Indian Field Ambulance also moved into harbour at Sungei Siput as an ADS of 16 Indian Field Ambulance which was already operating in Kuala Kangsar. On 22 December there was further fighting on the Grik road and at night the 12th Indian Infantry Brigade

withdrew across the Perak river covered by troops of the 28th Indian Infantry Brigade and went into bivouack at Salak North. During the day 36 Indian Field Ambulance had moved into the Chinese Maternity Hospital at Ipoh leaving a light section ADS at Sungei Siput. Next day at 0800 hours Japanese bombers attacked Salak North—a few Chinese houses on the main road—the rubber round which shielded the very tired men of the Argylls and the Punjab Regt. The bombing lasted four hours and as there had been no time to dig 'slit trenches' sixty casualties resulted. Extra cars were called up from the ADS and the cases quickly dealt with. On 23 December 36 Indian Field Ambulance came under command ADMS 11th Indian Division.

THE KELANTAN FRONT

On the night of 7 December at 2345 hours, the beach defence troops at Badang and Sabak beaches (N.E. coast Kelantan) reported ships anchoring there. The artillery opened fire and the ships shelled the coast. On this front the two forward battalions had to watch 30 miles of coast and each Coy had an average of over 3,000 yards. By 0025 hours on 8 December, the Japanese had landed at the junction of the two beaches and by 0100 hours had got the pill boxes of 3/17 Dogra, who were wiped out to a man after inflicting very heavy casualties on the Japanese. During the day the aerodromes at Kota Bharu, Yong Kedah and Machang were all attacked and considerable losses inflicted on the British aircraft returning for refuelling. The bombing by the Japanese was found to be very accurate and British air force was seriously weakened. At 1630 hours Kota Bharu aerodrome was no longer fit to operate aircraft and was evacuated. At 1900 hours more ships were reported off the Sabang beach and the Japanese started to infiltrate between the beach posts in the Kota Bharu area. A withdrawal during the night to a line east of Kota Bharu was ordered but in pouring rain and pitch dark orders went astray and part of 1/13 FFR was left behind. The Japanese also lost their tanks, most of their artillery and suffered some of their heaviest losses here during the landing.

This enormous front was served by one field ambulance, the 15 Indian Field Ambulance—which placed one ADS at the state school Kota Bharu and one ADS at the school at Ketereh and the MDS in a rubber estate north of Kuala Krai. Evacuation from RAPs to ADSs was carried out by ambulance cars and local buses which had been commandeered and improvised as ambulances. Where the distance was rather long sub-sections acting as mobile dressing stations (light section ADS) were placed between the RAPs and ADS under Assistant or Sub-Assistant Surgeons. During the frequent and rapid moves which took place during the next few days, these light sections proved of great value. Evacuation from the MDS was to the Section 12 IGH at Kuala Krai by ambulance cars of 15 Indian Field Ambulance. Ambulance rail-head was at Kuala Krai for Kuala Lepis where there was another Section 12 IGH. Only one ambulance train was as yet available for both the East and West coasts. The ADMS 9th Indian Division moved up to Kuala Krai on 8 December.

During the night of 8/9 December, there was heavy fighting on the Kota Bharu aerodrome and after a heavy Japanese attack astride the aerodrome road the Kelantan force withdrew to a position south of Kota Bharu. The line was stabilised and 4/19 Hyderabad Regt from Command Reserve, was ordered to a position 12 miles south of Kota Bharu covering Chong Dong, troops from the north beaches being ordered to cover the road Kota Bharu—Pasir Puteh. The remaining troops were withdrawn through the Hyderabad and night positions were established North of Chong Dong. On 10 December, troops were reorganised. On 9 December, the ADS at Kota Bharu fell back on the MDS leaving the ADS at Keteleh to evacuate the casualties. This ADS fell back by stages conforming to the movement of the troops and making some eight moves during the following days; movement being mainly by night. This ADS found itself on several occasions dangerously exposed to infiltrating parties of Japanese troops and on one occasion only an immediate move on the responsibility of the Company Commander prevented it from being overrun. On this day two Sections 19 IGH arrived at Kuala Krai from Mantin with the surgical team and equipment of the parent unit.

On 11 December, in view of the threat of Japanese landings to the south the Brigade Commander decided to give up Gong Kedah and Machang aerodromes and to concentrate south of Machang to cover communications. Evacuation of surplus stores was started at Kuala Krai on 12 December on which day another ambulance train was made available. This train evacuated to Singapore but no ambulance train was allowed to proceed north of Kuala Lepis. On 14 December one Section 12 IGH was evacuated from Kuala Krai to join the other Section of this unit at Kuala Lepis and by 16 December a third Ambulance train had also become available.

Withdrawal had been proceeding systematically during the past few days and all surplus stores and equipment having been sent away, withdrawal of the troops commenced. They had made the Japanese fight for each position with comparatively light losses on their side.

On 19 December, the two Sections 19 IGH at Kuala Krai were sent to Mantin (the mobile surgical team going to 12 IGH at Kuala Lepis, and the sub-depot medical stores going to Singapore). 15 Indian Field Ambulance then functioned in their place at railhead for some time and left later on; a detachment under the Commanding Officer, however, stayed to the end and left with the last of the troops. The Brigade Commander left by the last train. One truck of this train had been hastily improvised for carrying out emergency surgical operations and several were performed during the journey.

During the Kelantan operations several ambulance cars were lost owing to back axle failure but the rest were evacuated safely by train along with the rest of the transport. The evacuation of a large number of casualties had proceeded smoothly throughout the operations. On the last day, however, one ambulance rail coach (with no Red Cross markings) was destroyed by Japanese air action whilst on its way up to the rear-guard.

On 21 December, the evacuation of the Kota Bharu area was completed and the 8th Brigade then concentrated in the Kuala Lepis—Jerantut area; 15 Indian Field Ambulance reassembling and reorganising at Kuala Lepis after which it proceeded to Raub for a rest where it was joined by an MAS. On 24 December, one Section 12 IGH was ordered to join its parent unit at Singapore, the other Section 12 IGH (both Sections now at Kuala Lepis) being ordered to proceed to Bahau and open there. The hospital position at the moment was—100 beds at Jerantut (19 IGH) and 100 beds at Bahau (12 IGH). Evacuation was by rail to Singapore, but in the event of the railway being blocked north of Bahau it was arranged that the evacuation would be carried out along the road by cars of the MAS at Tanjong Malim to either 17 CGH at that place or to 20 CGH at Kajang.

OPERATIONS IN THE IPOH AREA

By 26 December, all troops in Ipoh had moved south to take up the line—Kg. Sahum, Kampar, Tapah, Bidor. 28 Indian Field Ambulance opened a MDS at the civil hospital Tapah (One Coy in reserve) and an ADS at Chenderiang 9 miles north of Tapah. The dispositions of 16 Field Ambulance remained unaltered (ADS at Pusing road, MDS at Batu Gajan main south road junction) but 36 Indian Field Ambulance now had its MDS in the civil hospital Ipoh with a light section ADS on the main road, 5 miles to the north, serving the 12th Indian Infantry Brigade which had occupied the Chemor line south of S. Siput. 18 Field Ambulance in Corps reserve (which had not yet been utilised) was withdrawn to Kuala Lumpur. 5 CCS moved from Sungkai to Tanjong Malim where it took over the buildings vacated by 17 CGH on 27 December. The course of events during the last few days had made the necessity for the withdrawal of 17 CGH imperative. The locality had been heavily bombed, though hospital area had not suffered possibly due to the display of a very large Red Cross in the grounds, and there had been difficulty in getting trains up to the hospital owing to the state of the railway. On the morning of 25 December, the hospital was closed and the patients (some 950) were evacuated to the civil hospital Seremban, the less serious going to 19 IGH at Mantin with the nursing sisters, leaving by the last ambulance train. On 27 December, 17 CGH was moved by railway train to Singapore, the loading of the three trains necessary to move this unit being carried out with great difficulty owing to bombing.

With the move of 17 CGH and 27 IGH, the position as regards hospital accommodation in III Corps area was becoming acute. Although 20 CGH was operating at Kajang it was in reality only functioning as a CCS while 19 IGH was capable of dealing with minor cases only. Little help could be expected from Malaya Command which had made provision only for the hospital requirements of the troops outside III Corps area in accordance with the policy which had been accepted, viz., that III Corps area should be self-contained as regards hospital accommodation and retain in that area all cases likely to be fit within a reasonable time (two months). Arrangement

had, therefore, to be made to take over 400 beds in the civil hospital at Kuala Lumpur (100 British and 300 Indian). On account of Japanese bombing and civil air casualties in Kuala Lumpur this hospital had not been willing heretofore to allot beds for military cases: but as the staff of the hospital was beginning to leave and the work of the hospital suffered, these beds were now made available in return for help from the military personnel. For this purpose the balance of the personnel of 27 IGH was moved up from Seremban and worked for both military and civil casualties. The position as regards hospital accommodation in III Corps area on 25 December was Kuala Lumpur 100 British, 300 Indian; Kajang 100 British, 500 Indians; Seremban 100 British, 300 Indians, Mantin 600 Indian; a total of 300 beds for British and 1,700 beds for Indian casualties.

On 26 and 27 December, the Japanese strongly attacked the 12th Brigade north of Chemor where 5/2 Punjab played a distinguished part. 5/14 Punjab had sixty casualties and one Coy 4/19 Hyderabad was lost and never heard of again owing to a last minute change of plan, of which orders had failed to reach them. A withdrawal was forced on the 12th and 28th Indian Infantry Brigades which began at 1900 hours on 27 December and continued throughout the night. The 12th Indian Infantry Brigade occupied a position south of Gopeng while the 28th Indian Infantry Brigade (less one Bn to Tapah area) moved to a position astride the defile road protecting the right flank of the Kampar position. 36 Indian Field Ambulance moved to an estate hospital at Sungkai leaving a light section ADS 400 yards south of Dipang bridge. Evacuations at this time were to 28 Field Ambulance at Tapah as the 11th Indian Division was then fighting on a one axis line of communications. When leaving Ipoh 36 Indian Field Ambulance had found its first line reinforcements there—which it had left on its way north—and sent them to Tapah; at this place they were bombed and 1 VCO was killed and three others wounded. 16 Indian Field Ambulance (less one Coy) moved into reserve at Tong Landen estate, the Coy taking over the ADS north of Chenderiang from 28 Indian Field Ambulance but moving it further forward to the 12th Milestone. 28 Indian Field Ambulance (MDS at civil hospital Tapah) opened an ADS at Kampar. On 29 December, the 12th Indian Infantry Brigade Group was attacked by the Japanese in strength at 1000 hours. The attack was repulsed but the brigade was ordered to withdraw in the evening through the Kampar position to Bidor in reserve. The Japanese followed up the withdrawal closely with tanks. During the day the light section ADS at Dipang was dive bombed and received two direct hits. It was almost overlooked in the withdrawal and just escaped being left behind. On this day 2/3 MAC was moved to Tanjong Malim and the MAS at Kuala Lumpur was moved to the vicinity of 20 CGH at Kajang. 30 December found the Japanese pressing against the right flank of the 28th Indian Infantry Brigade and beginning to infiltrate into Cicely estate from across the Kanta river. 5/14 Punjab was moved to milestone 27 on the Ct. Jong road to deal with this threat, 28 Indian Field Ambulance opening an additional ADS on the left flank to the north-west of Tapah road Station to cover this development. Japanese pressure was increased

against the 28th Indian Infantry Brigade on 31 December but all attacks were repulsed by the Gurkha Regiments with heavy Japanese losses.

THE BATTLE OF KAMPAR

On 1 January 1942, the Japanese concentrated all their resources against the 15th Indian Infantry Brigade but all their attacks were finally repulsed with heavy losses. Late in the day, however, at 1930 hours Japanese landings were reported near the mouth of the river Bernam at Ulu Melintang and the 12th Indian Infantry Brigade at Bidor had to be moved to meet this threat. Withdrawal from the Kampar position had now to be considered as a result of this threat in the rear. 16 Indian Field Ambulance was, therefore, ordered to open a MDS (with one Coy in reserve) 1 mile south of Bidor and to leave one Coy, under command of the 28th Indian Infantry Brigade. On 2 January, the Japanese renewed their attacks on the east of the main road where fierce fighting took place with heavy losses to them but the threat along the Telok Anson road combined with the news of another Japanese landing in the vicinity of Kuala Selangor compelled withdrawal from the Kampar position. The 15th Brigade disengaged and moved at night to the Tapah-Bidor area closely followed but covered by the 28th Indian Infantry Brigade. All the troops had fought extremely well at Kampar and confidence was regained with these first entirely satisfactory results. But sick rate had now begun to rise appreciably, an increase in the number of the cases of malaria being especially noticeable, the British battalion alone losing over 100 officers and men evacuated with malaria from Kampar. Although the issue of suppressive quinine had been ordered at the commencement of hostilities the supply of tablets had not always been adequate and conditions had mostly made the supervision of the final issue impossible.

At this stage 28 Indian Field Ambulance was ordered to move its HQ to Sungkai in reserve and place its ADS on the Kampar front under command of the 15th Indian Infantry Brigade and an ADS on the Telok Anson front. While at Kampar the MDS had been twice bombed and hit, the casualty reception room being wrecked in one raid. 36 Indian Field Ambulance (HQ and one Coy in reserve) opened an ADS at Sungkai and a light section ADS near the junction of the Ct. Jong-Bidor road under command of the Brigade, and it moved with 5/2 Punjab. A detachment was also sent back to the Slim River Area. The 28th Indian Infantry Brigade withdrew through Temoh to hold a covering position 2 miles south of Kampar with one Coy 16 Indian Field Ambulance under command 2/9 Gurkha. By midnight the 15th Indian Infantry Brigade had moved back in MT to take up another position at Bidor through the 12th Indian Infantry Brigade and Independent Coy which withdrew on the following night. The Advance HQ 11th Indian Division moved to Sungkai where the Japanese were very active in the air and the HQ suffered a number of casualties.

To meet the threat of Japanese landings at Kuala Selangor a small force was sent to that vicinity. It had the following medical units:—

No. 3 Volunteers Field Ambulance which was rapidly becoming ineffective through desertions, 18 Indian Field Ambulance from Corps reserve and one MAS under command of the ADMS of the Force. All evacuations were now by road to the civil hospital at Kuala Lumpur.

From the beginning of the new year the policy in regard to the salvage of medical stores was intensified. Medical supplies (less small amounts for the use of the civil population) from all civil sources, shops, dispensaries etc. were commandeered and sent to Singapore. These supplies, however, never became available for use as they were loaded on trains, which owing to labour shortage at Singapore could not be unloaded and were side tracked temporarily to Malacca where owing to the speed of the withdrawal after the evacuation of Kuala Lumpur they fell into Japanese hands.

On 3 January, the Japanese with strong air support attacked again in the Changkat Jong area and were repulsed. In the evening 12th Indian Infantry Brigade withdrew to the Trolak sector of the Slim position through the 15th Indian Infantry Brigade which followed it to a covering position at Sungkai while the 28th Indian Infantry Brigade moved to the Slim river village area. On this date 16 Indian Field Ambulance had one Coy with 2/9 Gurkha Rifles, and MDS (one Coy in reserve) 1 mile south of Bidor and 36 Indian Field Ambulance had an ADS at Sungkai with MDS and one Coy at Slim river. 28 Indian Field Ambulance had moved to Tin mine 5 miles south of Tanjong Malim in reserve.

The Advance HQ 11th Indian Division on the night of 4/5 January 1942 moved to Tanjong Malim where it joined for a few days for the first time since the beginning of operations the rear HQ of the Division. The DADMS was with this part of HQ and had been attending to medical affairs in the rear area most efficiently during this time. With the exception of a few days at Bengam and Skudai the Advance and Rear HQ were not to unite again until the division crossed on to Singapore Island. Meanwhile at dawn on 4 January, the 12th Indian Infantry Brigade moved into position at Trolak with the 28th Indian Infantry Brigade 6 miles further back near the Slim river. No battalion had more than three poorly armed Coys or more than two anti-tank rifles, some indeed having none. At this time 16 Field Ambulance placed an ADS with the 28th Indian Infantry Brigade 3 miles east of the Slim river and opened a MDS (one Coy in reserve) 1 mile south of Tanjong Malim, while 36 Indian Field Ambulance opened a light section ADS with the 12th Indian Infantry Brigade (Trolak sector) and a MDS at Slim river $\frac{1}{2}$ mile south of Slim village. Evacuations from MDSs were by 2/3 MAC (AIF) to the civil hospital at Kuala Lumpur. In the meantime patrols of the force at Kuala Selangor had several skirmishes with the Japanese, who were reported to be exercising a direct threat on the main road communications at Rawang. On 4 January 1942 in the afternoon, a sharp engagement took place at the bridge east of Batang Berjunti. At 2100 hours on 5 January the 15th Indian Infantry Brigade left Tanjong Malim for Rawang; 28 Indian Field Ambulance

moving with it to Serendah, where it opened an ADS 2 miles west of Rawang and a MDS 8 miles south of Rawang to meet the requirements of the Batu Berjunti area. The HQ 28 Field Ambulance moved with 5 MAS to Skeet Club near Kuala Lumpur.

The threat of Japanese landings in the rear on the West coast led to an alteration in the plan of operations. Instead of making a stand at Tanjong Malim as previously intended it was decided to oppose the Japanese in front of Kuala Lumpur to enable the 9th Indian Division from the East coast together with the 8th Australian Division and part of the 18th British Division to prepare for a decisive battle on the line Batu Anam—Mount Ophir—Muar. The weary and decimated 11th Indian Division was then to rest in Johore. In view of this change of plan it was decided by the ADMS 11th Indian Division to divest the Field ambulance on the Slim river front of as much personnel and heavy equipment as possible; consequently by the night of 6 January one hundred men, two officers and the bulk of the heavy equipment had been sent back to the vicinity of Rasa (the elements of 16 Indian Field Ambulance joining their unit at Tanjong Malim). Further in view of the general situation the DDMS III Indian Corps considered it advisable to move immediately some units to Singapore. On 6 January, HQ and two Sections No. 2 Malayan MAC was at Kuala Lumpur (only one Section with 9th Indian Division being fit for operations; the remainder being in process of raising and unfit for duty), 20 CGH was then at Rajang, 19 IGH at Mantin and No. 1 Indian Convalescent Depot at Moris. 5 CCS was moved from Tanjong Malim for a short rest to Kajang (by road) on 4/5 January after it had evacuated 251 cases by ambulance train on 2 January and 155 cases by road on 4 January to the civil hospital Kuala Lumpur which was staffed by 27 IGH. No. 8 Advance Medical Stores Depot was detached en route and left at Kuala Lumpur with No. 2 Advance Medical Stores Depot to which which it was now attached.

THE SLIM RIVER BATTLE

From 4 to 6 January, there had been little activity on the Slim river front except in the air and an attack down the railway line on the afternoon of 5 January which had been repulsed. Early on 7 January just before dawn in bright moonlight an attack, which was to prove disastrous, was launched by the Japanese tanks followed by a strong infantry force. The attack penetrated deep into the Slim river front and got control of the bridge at Slim. As all transport was on the farther side of the bridge it was soon cut off and lost. Considerable fighting went on throughout the day and losses were very heavy. In the afternoon a withdrawal was ordered down the railway line to Tanjong Malim (17 miles away). As a result of this battle the 11th Indian Division temporarily ceased to exist as an effective fighting formation. The real cause of this defeat was the desperate weariness of the troops who had been fighting by day and night for a month without proper rest or relief in a most exhausting climate. 36 Indian Field Ambulance (less withdrawals) and one Coy 16 Indian Field Ambulance

were amongst those lost. Both field ambulances had done invaluable work and been in operations, without any respite, since the beginning of hostilities. 36 Indian Field Ambulance alone had passed over 600 casualties through its hands and both had been constantly on the move with little opportunity for rest. For sometime after taking up position in the Slim area everything had been comparatively quiet, except for a number of casualties when the MDS of 36 Indian Field Ambulance was bombed. On 7 January, the OC 36 Indian Field Ambulance set out at 0715 hours to visit his ADS in the Trolak sector quite unaware of anything having gone wrong. On his way up he passed 5/14 Punjab going to their action stations and a little later slowed down behind a signal lorry which he could not pass on the narrow winding road. He heard what he believed to be dive bombers when he suddenly saw the lorry driving into the rubber plantation at the side of the road. Dropping his motor cycle he followed and then saw a tank came round the lorry. At a distance of a few yards seven tanks went past followed in a few minutes by six more of all sizes, the crews shouting and spraying the ground all round with bursts of machine gun fire. Moving to the railway running parallel to the road and along which troops were now moving south he made his way to the 28th Indian Infantry Brigade HQ where they were still unaware of what had happened. The OC 137 Field Regiment was at Brigade HQ and, against advice, immediately set off up the main road and was killed. Taking an orderly from 28th Indian Infantry Brigade HQ, OC 36 Indian Field Ambulance set out for 12th Brigade HQ but found it was out of contact with its units when he got there. Returning by ambulance car he picked up six men of the ADS on the way. As the railway bridge was demolished and the road bridge was in Japanese hands he left the car with the men at the HQ 2 Gurkha Rifles, and by swimming the river reached the MDS which had been peppered by machine gun fire scattering the cotton wool on the walls of the hut and giving a peculiar Christmas decoration effect. The ambulance trucks and equipment had been shot to bits. A staff officer of the 11th Indian Division on his way up to 12th Indian Infantry Brigade HQ shortly before the OC's arrival at the MDS, stated in his report afterwards that he had found all the field ambulance personnel at their posts quite unruffled and a 'large WO' taking it all calmly and cheerfully. The OC then set off again to contact the 28th Indian Infantry Brigade HQ where he found the Commander of the 12th Brigade also. Soon several tanks arrived and halting in the vicinity of the Brigade HQ shot up the transport. All units were then out of contact except 2 Gurkha Rifles. As the Commander 12th Brigade informed the OC 36 Indian Field Ambulance that nothing could be done about the evacuation of casualties from the Trolak sector as it was then occupied by the Japanese, he decided to organise stretcher parties and carry the wounded from the MDS down the road. Soon after starting, machine-gun fire caused the parties to separate with the result that the medical officer and his party took the wrong road. By night time it was impossible to carry the wounded any further and they were left beside the road, the party taking to the jungle to try and get round the Japanese tanks at the Slim bridge road block. This party hoped to get

help but lost its way in the jungle swamp and rubber plantations and eventually reached the coast at Kuala Selangor after ten days wandering and was surrendered to the Japanese by a local estate official. They were taken to Port Dickson by boat and then back to Kuala Lumpur. The medical officer after many adventures was picked up two and a half months afterwards, 250 miles south of Slim and six weeks after capitulation, and the ringleader of his party was sentenced by the Japanese to a term of solitary confinement in Outram Jail, Singapore. For their gallantry and devotion to duty, Lt. Col. Collins was awarded the OBE, and Maj. O'Neill a mention in dispatches. Lieuts. Karmarker, Sawar and Seal, S. A. S. Gupta and some 50 IORs survived captivity but the fate of others who were scattered from Sumatra to New Guinea remains unknown. Lt. Tapsell died in captivity.

At night on 7 January, the battered remnants of the 11th Indian Division withdrew from Tanjong Malim to Rasa being joined by the 22nd Indian Infantry Brigade (9th Indian Division) at Kuala Kuba. Together they were to make a stand about Rawang to deny Kuala Lumpur to the Japanese for another 48 hours. 16 Indian Field Ambulance moved to Rasa to open a MDS leaving a L/S ADS at Tanjong Malim until midnight. Next day on 8 January, 16 Indian Field Ambulance less losses at Slim river and car posts with the 28th Indian Infantry Brigade was in harbour at Batu Caves estate: 28 Indian Field Ambulance was functioning as on 6 January in the vicinity of Rawang and the remnants of 36 Indian Field Ambulance were sent to Kajang. 18 Indian Field Ambulance (Corps reserve) was maintaining a MDS at the civil hospital Kuala Lumpur but evacuations by rail from this place had now ceased. For some days past it had not been possible to get ambulance trains further north than Kajang and cases had to be taken from Kuala Lumpur by road and loaded at that place. The personnel of 27 IGH which had been functioning at Kuala Lumpur was evacuated on the night of 8/9 January to Singapore along with all the patients and a large amount of equipment. Subsequently, 2/3 MAC (AIF) evacuated cases direct from Field Ambulances to Seremban by road (a return journey of approximately 70 miles). All civil services in Kuala Lumpur had for some days ceased to function and the civil population had almost entirely disappeared. No 2 Advance Medical Stores Depot, to which No 8 Advance Medical Stores Depot from Tanjong Malim had been attached, had already been dispatched to Singapore where it arrived on 6 January. The stores of No 2 Depot, which had been loaded and dispatched on another train, were unfortunately never seen again. 2/3 MAC had also some days ago moved from Kuala Lumpur to Kajang and was functioning from there. CCS was ordered to move from Kajang to Tampin on 8 January to be prepared to open at short notice.

On 8 January, it was decided to use civil hospitals only as CCSs and not to retain any patients but to evacuate all to the hospitals at Johore Bahru and Singapore. Up to that time it had been possible by the use of civil hospitals staffed by personnel of 27 IGH to maintain an echelon of CCS but it was not likely that this could be done any longer owing to the withdrawal to the north of Johore State where

there were fewer civil hospitals whose staff was proving increasingly unreliable. An urgent request was, therefore, made to Malaya Command to provide another CCS (No. 1 Malayan CCS) which it was known was being raised at Singapore and the OC designate of which had already visited 5 Indian CCS to study conditions during operations. This unit, although it was reported as ready to function and placed at the disposal of III Corps on 13 January, could not be moved up from Singapore owing to lack of rail transport. The unit had no road transport of its own. It was, therefore, not until 20 January that it was in fact able to function. Casualties were, however, not expected to be heavy during the next few days though it was obvious that the sick rate was increasing. The decision not to retain cases up country in future but to evacuate all to the South was likely to throw a great strain on the ambulance trains which had been running almost continuously day and night for a month. These trains were improvised from ordinary rolling stock from which all ordinary fittings had been removed and in which sling stretchers were provided for 150-180 lying cases. The cooking and lavatory accommodation was quite unsuited to long journeys—time and distance of journey not necessarily bearing any relation—and the journeys were most uncomfortable for both patients and staff. The stretcher slings, however, proved most efficient, being both easy to load and unload, but cases with severe spinal injuries (of which there were many) required something more comfortable to lie upon during a journey of up to 20 hours. Cases were also very difficult to dress under these circumstances and with the constant movement of CCS many were received in hospital direct from field units with field or shell dressings which had not been touched for 36 hours. These trains were mostly driven by the survivors of the *Repulse* and *Prince of Wales* and a few volunteers.

On 9 January, the 28th Brigade had reached Serendah and the west coast troops after some skirmishing fell back on Klang. The 15th Indian Infantry Brigade after severe fighting in the Batang Berjunt position, in which one battalion had suffered considerable loss, withdrew to the Batu Arang area. 16 Indian Field Ambulance opened a light section MDS at Batu Caves estate and placed detachments under command of the 28th Indian Infantry Brigade while 28 Indian Field Ambulance which was now complete in this vicinity (Skeets Club) placed detachments under command of the 15th Indian Infantry Brigade group. HQ 2/3 MAC also moved to Seremban which was the ambulance railhead and the MAS at Seremban moved to Tampin. In the meantime the garrison at Kuantan had become involved in operations and had been forced to withdraw, partly on account of the events on the west coast and partly owing to the risk of being cut off.

THE KUANTAN OPERATIONS

Kuantan is one hundred miles, through desolate jungle, from Jerantut and one hundred and sixty miles from Raub (9th Indian Division HQ). The role of the 22nd Indian Infantry Brigade in garrison there was to protect the Kuantan airfield and it involved the holding of a coast-line of 12 miles (2/18 Garhwal Rifles), the perimeter of the

airfield and the approaches to the Pahang river by which the Japanese could cut the lines of communications, either at Maran (30 miles) or at Jerantut (100 miles), in the rear. The last of these tasks was given to 5/11 Sikhs with 5 Field Regiment Artillery in support. 27 Indian Field Ambulance was allotted to the 22nd Indian Infantry Brigade and it established a MDS at the camp hospital (11th milestone) on the Kuantan—Jerantut road. As there was no railway the evacuation of all casualties had to be by road and was carried out by a section of No. 1 Malayan MAC under command of 27 Indian Field Ambulance to the Section 19 IGH acting as a CCS at Jerantut. An ADS was opened at Kuantan on the axis of evacuation and two light sections ADSs on the coast-line. Evacuation to these from battalion posts was by Bn transport. Chinese stretcher bearers had been sent up by the DDMS Malaya Command from the Auxiliary Medical Depot, Singapore, for work on the beaches but it had been considered inadvisable by the Brigade to use them on this work as the Indian troops could not easily distinguish them from the Japanese. They were, therefore, used at the MDS to begin with and were later sent for work at the CCS Jerantut. A light section ADS was also opened on the airfield, ambulance car posts being attached to the RAPs on the river approaches. Evacuation from the ADS to the MDS was complicated by the fact that it entailed for ambulance cars a crossing of the Kuantan river by ferry. To provide against the contingency of the ferry being put out of action by bombing, which in fact later occurred, bearer posts were to be established on both sides of the river and a motor launch with Red Cross markings moored nearby. To meet the possibility of the line of communication being cut, an Advanced Surgical Centre was established in the camp hospital with a surgical team available to be called up, if required, from the Kuantan civil hospital. It was, however, only used for a few surgical casualties requiring urgent surgical attention as in fact the lines of communications were not disrupted.

Except for a heavy air raid on the airfield on 9 December which caused considerable damage and casualties no serious action developed in this area till 30 December. Initially stores had been maintained east of the river but owing to the hazards incidental on communications being disrupted they were moved to the west bank of the river. By the morning of 31 January, the Japanese were attacking the ferry which was destroyed by the retreating rearguard. But the river was forded in its upper reaches and serious threat developed to the communications on the west coast. On 30 December, the Japanese had advanced in strength down the Jabor valley and some heavy fighting took place during the next four days after which the Kuantan force was ordered to withdraw to Jerantut. The light section ADSs retired with 2/18 GR and 5/11 Sikhs respectively and the ADS took over from the MDS which retired to Jerantut leaving a light section MDS and the MAC at Maran. Bearer posts were placed at the Jerantut ferry and a light section ADS allotted to 2/12 FFR which had then joined the brigade. As the brigade withdrew to Maran the ADS took over from the light section MDS which then opened in a quarry about 15 miles east of Jerantut, the light section ADSs withdrew with the units to which they were attached. The

Japanese closed in on the airfield on 3 January which compelled heavy fighting, in which 2/12 FFR was involved. It was ambushed twice and in the course of these operations the Battalion Commander (Lt. Col. Cummings), who was awarded the VC was wounded and evacuated along with the other casualties by the light section ADS attached to the unit. When the rearguard (2/12 FFR) had crossed the Jerantut ferry on the night of the 6-7 January the brigade moved to the area Raub-Tars-Tranum.

On 5 January, the section 19 IGH (100 beds) which had been acting as a CCS at Jerantut (with the surgical team of its parent unit attached to it since 14 December) was ordered to join its parent unit at Mantin. Having no transport of its own it was in danger of being cut off. 15 Indian Field Ambulance also opened as a CCS at Raub for both the 8th and 22nd Indian Infantry Brigades. As it was no longer possible to bring ambulance trains north of Bahau, the casualties were evacuated by road by MAS under command of the ADMS 9th Indian Division to either Bahau or Seremban as the hospital (17 CGH) at Tanjong Malim had by that time evacuated. It was also decided that in the event of the railway being closed south of Bahau evacuation would be to the civil hospital Seremban which acted as a CCS. The 9th Indian Division prepared to move South to Gemas by the Bentong-Durian road via Kuala Pilah and Tampin which had to be cleared before the 11th Indian Division vacated its second delaying position. Whilst the 8th Indian Infantry Brigade withdrew, the 22nd Indian Infantry Brigade held the Kuala Lepis-Raub area and the road west to the Gap. 27 Indian Field Ambulance was no longer under command of the latter brigade and on 7 January opened a MDS at Bentong leaving light Section ADSs with the Battalions of the Brigade while 15 Field Ambulance moved to Kuala Pilah less an ADS at Kentakab. By 9 January, 15 Field Ambulance was in position at Segamat and was again functioning as a CCS; demolitions on the railway between Gemas and Bahau having led to the closing of the hospital (one Section 12 IGH) at the latter place. This section of 12 IGH had been ordered to move from Bahau to Segamat to open in the civil hospital but had been railed through to Singapore by error. The ADS 15 Field Ambulance moved to Batu Anam, a move like so many others, on a road choked with transport, in pitch dark and in pouring rain. The ADS was opened in a rubber estate but it was machine gunned from the air next day but there were no casualties. The ADS moved the following day to Buloh Kasap and was again attacked unsuccessfully from the air. On 10 January, the 22nd Indian Brigade was complete at Bentong and 27 Indian Field Ambulance (less Detachments with the brigade) moved back to Batang Malaka estate leaving a light section ADS at Marak which rejoined at Batang Malaka on 11 January. Evacuations were to 15 Field Ambulance at Segamat. On 12 January, 27 Indian Field Ambulance moved to Soofin estate, Labis, and opened in the estate hospital as a staging post on the route of evacuation of 15 Indian Field Ambulance. Here there was a change-over from the vehicles of an Indian MAS to vehicles of the Malayan MAC. This was necessary because the vehicles of the former MAS were breaking down owing to

their body weight involving too great a strain on their back axles whilst the latter MAC vehicles gave no trouble on the further journey to 5 Indian CCS at Rengam.

WITHDRAWAL TO NORTH JOHORE

The plan was for the 11th Indian Division and lines of communication troops to occupy two delaying positions during the withdrawal, one covering Seremban and Port Dickson and the other covering Tampin and Malacca. The existence of the lateral road Kuala Pilah-Seremban and the convergence of the divisional routes of the 9th and 11th Indian Divisions at Tampin made it necessary for the 9th Indian Division to be clear of Kuala Pilah—Tampin before the first and second delaying positions were vacated by the 11th Indian Division. Soon after dawn on 10 January, the 28th Indian Infantry Brigade group (11th Indian Division) was attacked at Serendah and quickly enveloped on both the flanks. Fierce fighting continued throughout the day and the 28th Indian Infantry Brigade had to force its way through but it suffered severe losses in the action. It embussed for Tampin in the late afternoon and the 15th Indian Infantry Brigade which had been withdrawn from the Batu Arang area the previous night followed the 28th Indian Infantry Brigade through Kuala Lumpur whilst lines of communication units defended Klang. The 12th Brigade (600-700 strong) was already at Mantin (Setul) pass, North of Seremban. The coastal troops (L of C) withdrew from Klang area during the night. During the day 16 Indian Field Ambulance (less Detachments with the 28th Indian Infantry Brigade) was ordered to Seremban and 28 Indian Field Ambulance (less detachments and car posts with the 15th Brigade) to the vicinity of Jasin. Evacuation of casualties was by 2/3 MAC to 5 Indian CCS which had opened at Tampin civil hospital and was receiving casualties from both 9th and the 11th Indian Divisions. This was made necessary by the demolitions which had been carried out on the railway between Bahau and Gemas. On the night of 10 January the patients, staff, medical and surgical equipment of the civil hospital Seremban were evacuated by ambulance train to Singapore, the hospital being looted by the civil population immediately after it was vacated. On 11 January, 16 Indian Field Ambulance established a MDS at the cross roads, Rantau road-main road, and an ADS at Seremban—the detachment with the 28th Indian Infantry Brigade still remaining with the brigade. 28 Indian Field Ambulance was in harbour at Rantau with the remnants of 36 Indian Field Ambulance and 13 Indian Field Hygiene Section from Kajang in the vicinity. 18 Indian Field Ambulance (less one Coy with brigade) on the coast now came under command of the 11th Indian Division. It had an ADS in the vicinity of Port Dickson and a MDS south of Seremban. Owing to further demolitions on the railway having interrupted the communications between Gemas and Tampin, it was no longer possible to get ambulance trains up to the latter place and all evacuations had to be by road from Tampin to Gemas where they were entrained.

On 12 and 13 January, lines of communication troops were covering Malacca with the 15th Brigade in the Alor Gaja area and the 12th

Brigade at Gemas entraining for Singapore. The commitments of 16 Indian Field Ambulance remained unchanged and 28 Indian Field Ambulance moved into reserve at Jasin, with the ADSs at Alor Gaja and Tampin. 5 Indian CCS at Tampin was then ordered to close and departed on the night of 12/13 January for the vicinity of Rengam having first evacuated its 215 patients to the civil hospital Segamat. All casualties were being evacuated by road to the civil hospital Segamat which was staffed by 15 Indian Field Ambulance of the 9th Indian Division. It was noticed at this place that although the railway in the vicinity had been repeatedly bombed for several days no effort was made by the Japanese to interfere with two ambulance trains which were harboured near this station in daylight. On 13 January 16 Indian Field Ambulance received orders to withdraw to the vicinity of Ayer Hitam while 28 Indian Field Ambulance (HQ Jasin) maintained its ADSs and placed car posts with the Brigade at Malacca. 15 Indian Field Ambulance was still functioning as a CCS at Segamat and 18 Indian Field Ambulance with HQ 10 miles south of Tampin had two ADSs operating independently and had lost contact. It was ordered to send a light section MDS to Malacca to relieve the car posts of 28 Indian Field Ambulance. The withdrawal continued throughout 13 January and by 14 January all troops of III Indian Corps were clear and command of the forward area then passed to Commander 'Westforce' III Indian Corps who was made responsible for South Johore from 2000 hours on 14 January. It had been decided that the troops in Johore would be reorganised into two forces—the 'Westforce' and the III Indian Corps. The 'Westforce' was composed of the 9th Indian Division; AIF (less 22 Australian Brigade group), 45th Indian Infantry Brigade group; and 2 Loyal Regt. The III Indian Corps was composed of the 11th Indian Division; (22 Australian Brigade group and 2/17 Dogra—to be known as 'Eastforce') and III Indian Corps troops. Both forces had artillery, engineer, medical and administrative units.

The task of 'Westforce' was to hold the north-west portion of Johore on the general line Batu-Muar while the task of the III Indian Corps was the defence of Johore south of and inclusive of the line Endau-G. Beremban-Kluang-Batu Pahat (less Pengerang area). The 11th Indian Division was to be accommodated in areas where it could be rested and reorganised. The Indian troops were desperately weary; they had borne the burnt of the fighting and were affected by the Japanese superiority in tanks and aeroplanes. Indian reinforcements had been hurried over ill equipped and with little training. The AIF was, on the other hand, fresh and comparatively well trained. By this time all military hospitals in North and Central Malaya had been cleared to Singapore but for the most part they were not yet functioning again. The 2/10th Australian General Hospital at Malacca had been cleared to a site on the northern outskirts of Singapore town but was not able to take patients again until 25 January when it was able to accommodate 538 patients. The 2/13th Australian General Hospital at Tampoi Hill, some 7 miles north of Johore Bahru, was expanded from 600 to 1,200 beds to cover this move but further hospital accommodation was urgently required in South Johore and Singapore. Alexandra

hospital, the main hospital for British troops in Singapore Island, was full and using private houses as branch hospitals for the less serious cases but this gave only additional 140 beds. No. 1 Malayan General Hospital was moved up to the civil hospital Johore Bahru and had approximately 200 beds; but the sick rate was steadily mounting and a renewed flow of casualties could be expected with further fighting. At this time there were only two CCSs functioning—2/4 Australian CCS at Kluang and 5 CCS at Regam (estate hospital). Evacuations to these from the Northern sector was the responsibility of the 'Westforce' but from there to Singapore by ambulance train was under command of the III Indian Corps. Evacuations on the East coast were direct to the General Hospitals at Johore Bahru—AIF to 2/13 Australian General Hospital and British and Indian to No. 1 Malayan General Hospital. Owing to the absence of hospital ships, there had been so far, no evacuation of casualties ex-Singapore since the commencement of hostilities.

On 13 January, the 53rd British Brigade with 198 British Field Ambulance arrived in Singapore and was to be shortly on its way up to the III Indian Corps to be placed under command of the 11th Indian Division.

THE JOHORE OPERATIONS

On 14 January, the disposition of the 'Westforce' troops was as under:—

27th Australian Brigade group and 8th Indian Brigade group astride the main road and railway north of Segamat with one battalion forward in an ambush position west of Gemas. The 22nd Indian Brigade group was astride the Malacca-Segamat road with the forward battalion about the Jementah cross roads.

On the afternoon of 14 January, the 2/30th Australian Battalion (AIF) carried out a most successful ambush west of Gemas killing over 500 of the Japanese. Next day heavy fighting took place in this area with little loss to the defending troops. 15 Indian Field Ambulance was still at Segamat on 15 January taking casualties from both the 8th and the 22nd Indian Brigades and had both its ADSs working without relief. One ADS was working with the 22nd Indian Brigade and one ADS with the 8th Indian Brigade the latter also dealt with a number of AIF casualties. During the time this ADS was at Buloh Kasap, the medical officer in charge of the ADS of the 8th Indian Brigade whilst on his way to visit RAPs was cut off by a Japanese patrol and could only manage to escape by taking to the jungle. 2/10 Australian Field Ambulance was working under command of the 27th Australian Brigade group and as mentioned in the locations for 13 January two CCSs were functioning (5 Indian CCS at Rengam and 2/4 Australian CCS at Kluang). The line of evacuation was as noted on that date. The Australian field ambulance worked with mobile ADS moving back at the last possible moment and with sub-units trained to be self-contained and completely mobile MAC vehicles were fre-

quently used in front of the MDSs. This corresponded closely with the practice of Indian field ambulances which also on occasion attached car posts to the units or under brigades. The Australian CCS had a light section which was self-contained and was made completely mobile by the use of transport borrowed or commandeered. 5 Indian CCS had, as previously stated, shed its heavy section equipment on 18 December and made itself completely mobile by commandeered and allotted transport from 5 January. These two CCSs could, therefore, be retained in position longer than would have been otherwise possible. The Indian field ambulances had also found from early experience that it was a sound proceeding to attach one MCDR, familiar with his units locations, to the ADMS as it enabled orders to be issued direct and without delay. It also provided a speedy means for the ADMS could visit medical units when the roads were congested with transport or there was much air activity over them. The totally inadequate allotment of MCDRs to the field ambulances for mobile warfare, sometimes, however, made it difficult to allot one for this purpose. At times it was necessary to place Field ambulances with brigades when the distance involved prevented adequate control; on occasions the field ambulances or their detachments were overlooked and failed to receive orders when with their brigades in spite of close liaison being maintained. Generally it was considered preferable for these units to remain under the control of ADMS as he had a fuller picture of the situation and the requirements. During active operations 'Signals' were always overloaded with urgent messages and to avoid delay it was advisable for the ADMS to have a direct line of communication with his field ambulance commanders. These field ambulance despatch riders proved at all times most valuable although their work was often performed under very unpleasant and hazardous conditions. On one occasion a despatch rider of 16 Indian Field Ambulance, although shot through the chest, finished his mission before reporting himself a casualty.

By 15 January, 28 Indian Field Ambulance (11th Indian Division) was at Mengkibol meeting all local requirements and with an ADS at Kahang aerodrome and a car post at Jemuluang. 16 Indian Field Ambulance was at Rengam. The successful actions in the Segamat area on 14 and 15 January had been encouraging but already a new threat to the Westforce communications had arisen through Japanese landings in the Muar area and on 15 January the III Corps was made responsible for the protection of the 'Westforce' communications. On 16 January, the newly arrived 53rd British Brigade with 198 Indian Field Ambulance attached, was placed under orders of the III Indian Corps and instructed to move to Ayer Bitam where it came under command of the 11th Indian Division. One battalion (5 Norfolks) was held there in reserve, one battalion (2 Cambs) was sent to Batu Pahat and one battalion (6 Norfolks) was sent to hold the defile some 11 miles west of Yong Peng. 198 British Field Ambulance established its HQ and MDS at Simpang Rengam, an ADS proceeded to Yong Peng and an ADS opened at Ayer Hitam 2 miles west on the Batu Pahat road. 28 Indian Field Ambulance sent a small detachment to 198 British

Field Ambulance to help in dealing with Indian patients in respect of their language, food and other difficulties.

THE BATTLE OF MUAR

The defence of this area had been entrusted to the 45th Indian Infantry Brigade under command of the 'Westforce' with 38 Indian Field Ambulance attached. They had both newly arrived in the country and the troops were raw and untrained. 38 Indian Field Ambulance had no practical knowledge of the country or of the operations of this nature and it had been recently moved up from Segamat where it had received its equipment and transport only on 11 January. On 15 January, the Japanese had reached the north bank of the river Muar and small parties had landed between Batu Pahat and Muar and also to the west of Batu Pahat. Sharp and continuous fighting took place on the next day at Muar, and by evening the 45th Indian Infantry Brigade was concentrated in the Bakri area. 6 Norfolks were then ordered to hold the defile, 11 miles west of Yong Peng and the bridge five miles further west. As the Japanese danger to the 'Westforce' communications was a very serious one and was threatening to cut off the whole of the Segamat force should it reach the Yong Peng area, it was decided to strengthen this front and the 2/29th and 2/19th Australian Battalions were moved to the Muar area. On 18 January, very heavy fighting took place and a division of the Japanese Imperial Guards was located in this area. 38 Indian Field Ambulance put through 210 casualties from this engagement. A strong Japanese force had also been landed on the coast north of Batu Pahat and as a result the withdrawal of the 'Westforce' behind the river Segamat was approved and the whole of the Muar front was placed under command of III Indian Corps. On 19 January, there was heavy fighting in the Muar area and in the afternoon the Japanese seized the defile west of Yong Peng. The 45th Indian Infantry Brigade was ordered to withdraw, but when concentrating in the evening, was heavily attacked from all sides and lost severely. One Coy 38 Indian Field Ambulance was cut off and and was never able to rejoin. The MDS of 38 Indian Field Ambulance was $\frac{3}{4}$ miles from the Yong Peng-Muar road junction. Next day the remainder of this unit (which was later reported as having done magnificent work) withdrew into harbour at Ayer Hitam leaving the ADS of 198 Indian Field Ambulance in position at Yong Peng. After two more days of desperate fighting the Muar force had to destroy its guns and vehicles and the survivors (some 500 AIF and some 400 Indian troops) made their way through the jungle to Yong Peng. The wounded were all left behind with the volunteers but were reported to have been massacred by the Japanese. This stand against the Japanese Imperial Guards for six days by the untried Muar force, in one of the bloodiest battles of the campaign, nevertheless secured the safe withdrawal of the Segamat front.

WITHDRAWAL FROM SEGAMAT

As soon as the full force of the Japanese thrust at Muar became

known it was realised that an immediate withdrawal of the troops on the Segamat front would be necessary to avoid their being cut off. On 18 January, the Japanese attacked on the main road north of Batu Anam but were repulsed and during the night, in accordance with the plan, the 9th Indian Division withdrew behind the river Muar and the 27th Australian Brigade behind the River Segamat. 15 Indian Field Ambulance moved to the Chinese school (vicinity Labis) and ordered the ADS at Buloh Kasap to withdraw and open at Segamat, the other ADS of this unit moving with the 22nd Indian Infantry Brigade and meeting its requirements. 2/10 Australian Field Ambulance was functioning according to the needs of 27 Australian Brigade. During the night of 19/20 January, the 9th Indian Division withdrew to the Tenang area, 15 Indian Field Ambulance opening an ADS in the Socfin Palm oil estate, Labis, and moving its HQ and MDS back to Rengam by stages. 27 Indian Field Ambulance then moved back to Sedendak from Labis, and 2/10 Australian Field Ambulance moved to one mile north of Labis. On 20/21 January, the 27th Australian Brigade moved back in MT to Yong Peng, 2/10 Australian Field Ambulance joining the light section 2/4 CCS at Kluang, while the 9th Indian Division moved one brigade to the Labis area and one to Kg. Bahru. The ADSs of 15 Indian Field Ambulance moved with brigade HQs and opened in the vicinity in order to secure protection from the Japanese and from being cut off. On the night of 21/22 January, the 22nd Indian Infantry Brigade moved to the Kluang area by MT (less one Bn marching down the railway line to the Paloh area) while the 8th Indian Infantry Brigade took up a position astride the main road some 12 miles south of Labis contacting the Japanese on 22 January when fighting continued throughout the day. During the night it withdrew to a position four miles north of Yong Peng where more fighting with intense Japanese air activity, ensued. From Yong Peng this ADS moved to Rengam, the MDS of the unit moving from Rengam to Frazer estate, Kulai, while the other ADS of the unit remained with the 22nd Brigade, now in the Kluang area. By midnight of 23/24 January, the rearguards of both the Segamat and Muar fronts were passing through Yong Peng where there was still an ADS of 198 British Field Ambulance which was serving the troops of the 53rd British Brigade on the Muar-Yong Peng road and which on the night of 23 January had been placed under command of the 53rd British Brigade. On the completion of the withdrawal of all troops from the Yong Peng area, the 'Westforce' came under command of the III Indian Corps. During the period of withdrawal the heavy section 2/4 Australian CCS left Kluang and moved south to Frazer estate, Kulai where it arrived on 20 January. 2/13 Australian General Hospital had fortunately completed its move and was ready to function on 26 January and accommodate 538 patients. But 5 Indian CCS was badly in need of rest as it had been in constant operation since the beginning of hostilities with frequent moves at short notice. It was, therefore, withdrawn from Rengam to Singapore on 23 January leaving one surgical team behind attached to 15 Indian Field Ambulance. It was replaced by No 1 Malayan CCS. This unit which had just come up from Singapore was ordered to Sedendak to open in tents instead of coming to Rengam, as originally intended; and as this

unit had no transport of its own it was arranged that on the completion of the move of 5 Indian CCS the transport of that unit should be returned to Sedendak and attached to No. 1 Malayan CCS for duty. On 21 January, No. 1 Malayan CCS arrived at Frazer estate, Kulai where it found 2/4 Australian CCS, which had arrived on 20 January, in occupation of all buildings. The surgical team was, however, attached to the Australian unit and commenced to open in tents. In spite of having to construct a road for ambulance cars to approach their site (which was done by a labour force put at their disposal by the manager of the rubber estate) and difficulties in regard to water supply this unit was able to function on 22 January and dealt with 193 cases before moving to Johore Bahru on 26 January. Meanwhile, 5 CCS had in six days (14-20 January) which had included two moves, dealt with 824 cases. From 1 January to 20 January, this unit had moved six times and dealt with 1,445 cases all of which had been evacuated by road and rail. With the greatly shortened lines of communication ambulance trains had been able to run more frequently, but on 23 January they were discontinued and all evacuations after this date were made by cars of the MAC. However, as the distance involved was comparatively short, only some 30 miles, no difficulty was experienced. The contraction of the front which was then in action made it apparent that a number of the divisional field medical units were becoming redundant and that their return to Singapore was due for consideration. Events, however, were moving so rapidly that in a few days it became part of the general plan of withdrawal. Although the Segamat force had been saved from a very dangerous position still the general situation remained extremely serious. Already the 15th Indian Brigade had become involved at Batu Pahat and was soon heavily engaged, with the result that plans for the withdrawal of all troops from the mainland were considered.

BATU PAHAT OPERATIONS

Batu Pahat is linked by good roads with Yong Peng in the north, Ayer Hitam to the east (20 miles) and Pontian Ketchil to the south (46 miles). To the Japanese with their command of the sea this route was accessible at any point; hence arose the necessity of holding both Batu Pahat and Pontian Ketchil for the protection of the main lines of communication, 20 miles inland. On 19 January, the 15th Brigade, composed of 2 Cambs and one Coy 2 Malay Battalion, became responsible for this area with the task of holding the town and keeping the road open to Ayer Hitam; 5 Norfolk Regt assisting from the Ayer Hitam end. On 18 January, 198 British Field Ambulance opened an ADS 2 miles west of Ayer Hitam on the Ayer Hitam-Batu Pahat road with HQ and one Coy at Simpang Rengam where a MDS was opened. On 19 January, 16 Field Ambulance moved to Skudai Pontian Ketchil road to come under command of the 28th Indian Brigade and next day on 20 January, to make 198 Indian Field Ambulance more mobile; 70 men for whom there was no transport were sent back to Singapore. 16 Indian Field Ambulance opened an ADS at Pontian Ketchil and an ADS at Raja (vicinity reservoir) with HQ 1 mile south of Skudai where

18 Indian Field Ambulance was operating a clearing station in the Chinese school.

The Advance HQ 11th Indian Division moved forward from Rengam to Ayer Hitam. On 22 and 23 January, skirmishes took place on the Ayer Hitam-Batu Pahat road, which was finally closed on the evening of 23 January. On 22 January the medical officer commanding the ADS and another medical officer from 198 British Field Ambulance were held up returning from Batu Pahat to Ayer Hitam by a road block. Their car was machine gunned and put out of action. They, however, managed to escape and made their way back to Ayer Hitam on foot. A light section ADS was sent with 5 Norfolks on the evening of 23 January to Batu Pahat via Skudai and Pontian Ketchil which reached here on the morning of 24 January. The ADS on the Batu Pahat road was withdrawn four miles south of Ayer Hitam, from where it could be readily moved as there was evidence of Japanese patrols in the vicinity. One ADS of 198 Field Ambulance was still functioning at Yong Peng on 23 January, though it had to move several times owing to intense Japanese air activity, and in the evening was attached 53 British Battalion. The Japanese air activity was also very marked at this time at the Ayer Hitam cross roads in the vicinity of which was the Advance HQ 11th Indian Division. 28 Indian Field Ambulance withdrew from its commitments at Mengkibol on the night of 22 January and came into reserve 1 mile south of Skudai on the main road on 23 January, 16 Indian Field Ambulance sent one Coy from Pontian Ketchil to Kota Tinggi to open an ADS with the Eastforce. On 24 January, fighting went on throughout the day at Batu Pahat and the HQ 198 British Field Ambulance moved to Anglo-Javanese rubber estate south of Skudai and the Advance HQ 11th Indian Division to Skudai. An attempt was made on 25 January to relieve the 15th Indian Infantry Brigade by troops of the 53rd British Brigade released from Yong Peng; 198 British Field Ambulance detailing an ADS to accompany them. This ADS was established at Benut as only some of the leading troops had got through and joined the 15th Brigade. The officer commanding ADS got through with these but was unable to get back again to the ADS as the road was blocked and by evening the road between Senggarang and Rengit was held by the Japanese. Early, the previous morning, a convoy of about 40 wounded had got through to Pontian Ketchil, but many more still awaited evacuation as heavy fighting had occurred. A convoy, including fifteen ambulance cars, tried unsuccessfully that night and again on the succeeding night to break through and establish contact. All through the day of 26 January the 15th Brigade now at Senggarang tried to break through but the troops were exhausted and their efforts failed. In the evening orders were given for the units to make their way on foot along a route on the coastal flank of the road, as there was no possibility of the brigade fighting its way out as a formation within the limit of time given to it for complying with the co-ordinated withdrawal from the mainland. One contingent moved east of the road and reached Benut on the night of 27/28 January. The remainder, about 2,000 officers and men, reached the sea at the north of the river Ponggor. From here they were evacuated by the Royal Navy on four successive nights

to Singapore. Two officers, one chaplain and some personnel of the RAMC (198 British Field Ambulance), volunteered to remain behind with the wounded who were too ill to move and a medical officer accompanied those who could be evacuated. The latter did not reach Singapore until 7 February, having had to lie up in creeks and such places during the day. Unfortunately, on the last night, he got a tow from a launch which resulted in the upsetting of his boat and the drowning of several of the wounded too ill to swim. The wounded left behind, one is happy to record, were not molested on this occasion by the Japanese. In the meantime, on 25 January, 16 Indian Field Ambulance handed over its commitments at Skudai to 28 Indian Field Ambulance and closed under orders to move. 28 Indian Field Ambulance opened an ADS at Pulau (reservoir area) with car posts at Raja and Pontian Ketchil. The dispositions of 198 Field Ambulance were as already given:—

HQ at Skudai, ADS with the 15th Brigade at Batu Pahat and ADs with the relieving troops (53 Brigade).

On 27 January, 16 Field Ambulance and HQ 198 British Field Ambulance both moved to Singapore and 28 Field Ambulance took over all the commitments on the Skudai—Pontian Ketchil road. On 28 January Benut was occupied by the Japanese and in the evening contact was made with their troops north of Pontian Besar, patrol encounters taking place on 29 January in the Gunong Pulau reservoir area where a strong position had been prepared. The car posts at Pontian Ketchil and Gunong Pulau were augmented and on the evening of 29 January the ADS was withdrawn to the main Pontian Ketchil road four miles west of and nearer Skudai. The clearing station maintained by 18 Indian Field Ambulance at the Chinese school, Skudai, was also taken over by 28 Indian Field Ambulance to enable the former unit to be withdrawn to Singapore. On the night of 30/31 January, 28 Field Ambulance withdrew with the main body of the troops and the bulk of the transport to Singapore Island where it opened in the Mental Hospital, Paya Lebar; the car posts withdrew with the rearguard of the 28th Indian Brigade.

THE KLUNG-AYER HITAM OPERATIONS

There were now two columns to be withdrawn from this area—one from Kluang (9th Indian Division—22nd and 8th Indian Brigades) down the railway line and one from Ayer Hitam (27 Australian Brigade with 2 Gordons) down the main road and it was necessary that their moves should be carefully co-ordinated. After a successful action on 25 January against the Japanese who had been contacted in front of the Kluang area early on 24 January, the 22nd Indian Infantry Brigade withdrew to Rengam—the 8th Indian Infantry Brigade having been moved up to Kluang in reserve—and covered the level crossing south of Rengam. The 8th Indian Infantry Brigade then moved back to Rengam by motor transport from where it proceeded on foot down the railway line. The transport of the ADSs was sent by road to the MDS which was then situated at Frazer estate, Kulai, and all the supplies and equipment which would be required had to be carried by the personnel

on foot. From this time evacuation of casualties was by trolley car pushed by hand down the line, there being no road communication. On 28 January disaster hit this column. A gap having developed between the forward 22nd Indian Brigade and the 8th Indian Infantry Brigade in reserve in the Layang-Layang area, the Japanese penetrated, having moved round the eastern flank by estate roads, and cut off the 22nd Indian Infantry Brigade. One ADS of 15 Indian Field Ambulance, one MO, one SAS and 40 IORs were lost as was also another officer who was taking orders up to the other ADS. Many efforts were made to recover this brigade but unsuccessfully, and the 8th Indian Infantry Brigade was forced to retire down the line until Sedendak was reached. The ADS retired on foot with Brigade HQ and carried what casualties it had not been able to evacuate. At Sedendak contact was made with the road and casualties were evacuated by ambulance cars sent up by the MDS. The Brigade then made a further move to Kulai from where, after an eight mile march down the road, the ADS was moved by motor transport on the night of 30/31 January to Singapore Island. It crossed the causeway some hours before it was destroyed and joined the remainder of the field ambulance at Sompah village. 15 Indian Field Ambulance had by now lost a considerable amount of equipment and transport, three medical officers, one SAS and some 60 IORs. During the retreat they had evacuated some 1,500 casualties.

The other column on the main road contacted Japanese troops north of Ayer Hitam on 25 January and fighting continued during the day, the forward troops falling back according to plan through 2 Gordons at Milestone 49. The Japanese followed up energetically and a number of engagements were fought astride the main road by the 27th Australian Brigade with 2 Gordons. This Brigade was served by 2/10 Australian Field Ambulance, which moved back from a position at the 40 $\frac{1}{2}$ milestone Johore Bahru-Ayer Hitam road to a position at the 23 $\frac{1}{2}$ milestone on 26 January and finally moved to Bt. Panjang on Singapore Island on 29 January. Evacuation of casualties for this column was by MAC, ambulance trains having ceased to function after 23 January. The distances were short and ample motor ambulance transport was available.

EAST COAST OPERATIONS

This front was watched by the 'Eastforce' which comprised the 22nd Australian Brigade Group, 2/17 Dogra and detachments of Johore Military Forces. It was served by 2/9 Australian Field Ambulance and evacuations were direct to General Hospitals at Johore Bahru by MAC—AIF to 2/13 Australian General Hospital (2/4 CCS from 25 January) and No 1 Malayan General Hospital (No 1 Malayan CCS from 25 January) for British and Indian troops. From 16 to 20 January, 28 Indian Field Ambulance had car posts at Jemuluang and an ADS at Kahang aerodrome. This ADS was withdrawn east of Kluang on 21 January. 16 Field Ambulance had one Coy at Kota Tinggi from 22 January. The 22nd Australian Brigade was forward at Endau and Jemuluang with 2/17 Dogra watching the long and vulnerable communications back to Kota Tinggi. From 14 January, patrol encounters,

ambushes and fighting took place in the Endau-Mersing-Jemuluang area. On the night of 26/27 January fresh Japanese troops were ambushed with heavy loss to them in the latter area. However, the withdrawal of this force went according to plan. The final move took place in motor transport from Kota Tinggi to Singapore Island. A bridge-head defence force, to guard the causeway, over which all troops on the mainland were to cross to Singapore Island, was formed. 38 Indian Field Ambulance was allotted to this force, with 24 wheeled stretchers and additional Chinese ambulance bearers. A MDS was opened about half a mile south of the Causeway and 12 wheeled stretchers were sent across with 20 ambulance cars, the other 12 wheeled stretchers being put under control of the medical officer of the Argylls. The total casualties at the bridge-head were about 75. After all the troops had crossed from the mainland and the causeway had been destroyed, 38 Indian Field Ambulance moved to Rideout Camp, Singapore.

When the decision to vacate the mainland on the night of 30/31 January was received on 25 January by the III Indian Corps (now in operational control of the whole mainland) arrangements were made to move to Singapore Island all medical units not in active operation so as to be clear by midnight of 29 January. These units were then to come under orders of Malaya Command. No. 1 Malayan General Hospital, the Anti-Malaria units, four MASs, one MAC, two Field Hygiene Sections and a number of field ambulances (no longer required owing to the concentration and shortening of the lines) were evacuated to Singapore. 2/13 Australian General Hospital had already moved on 24 January. On 28 January, No. 1 Malayan CCS moved to Johore Bahru from Kulai and crossed to Singapore Island on 30 January having closed on the night of 29/30 January. It evacuated 612 casualties during the seven days it functioned (including two moves). Many of the cases were local bombing casualties. All evacuations were direct from field ambulances to general hospitals in Singapore. The remaining medical units crossed to Singapore Island with the formations to which they were attached and the withdrawal of all troops from the mainland was completed by 0815 hours on 31 January without incident. With the evacuation of all troops from the mainland to Singapore Island the first and more active, or rather mobile, period of operations came to an end.

As can be readily seen from the very brief description of the operations, casualties amongst medical officers were very high, and the fate of many remained unknown owing to the units having been overrun or cut off by Japanese infiltration. Replacements had to be made from Field Ambulances and as a result the units often had to remain short of their establishment owing to the difficulty in getting reliefs. Although there had been a certain loss of equipment and vehicles (the latter was mostly made good in the early days from abandoned civil sources) most Field Ambulances crossed to Singapore Island in a condition fit to function. The major losses were:—

30 Indian Field Ambulance (less withdrawals by the night of 6 Jan.) and one Coy 16 Indian Field Ambulance at Slim River, one Coy 38 Indian Field Ambulance lost in the Muar operations, one ADŞ

15 Indian Field Ambulance lost at Layang, and two light section ADSs
198 British Field Ambulance lost at Batu Pahat.

16 Indian Field Ambulance was, however, made up to strength with the remnants of 36 Indian Field Ambulance. All field ambulances had done fine work in these operations under very arduous conditions and the flow of evacuations never broke down. 16 and 28 Indian Field Ambulances which had been continuously in operation from the beginning bore the brunt with 36 and 15 Indian Field Ambulances, but all responded magnificently to their task when the time came. All casualties reaching a field ambulance were certain of arriving at a base hospital, unless the field ambulance was cut off or overrun by the Japanese, when with the greatest courage the medical personnel did everything possible to protect the wounded and sick and care for them. The position as regards CCS at the beginning of operations was only saved by utilising sections of General Hospitals as CCS on the Kelantan and Kuantan fronts and later establishing a chain of CCSs on the main line of communications, in civil hospitals which were staffed by field ambulances and 27 IGH. This unit had lost all except its medical and surgical equipment, in the evacuation of Penang and, therefore, continued to function in the capacity of a CCS only. No. 5 Indian CCS had a gruelling time, having been in active operation without respite and constantly on the move at short notice, from the beginning of the campaign until relief on 20 January. Evacuations from the CCSs were mostly carried out by 2/3 MAC (AIF). This unit was most efficient and worked unsparingly. The MASs (Indian) worked well forward to the ADSs and augmented the cars of the field ambulances when required. They did invaluable work and acquitted themselves with great credit. As previously explained it had been the intention that III Indian Corps should be self-contained and medical demands had been based on that assumption. The build up was, however, too slow and the outbreak of hostilities found III Corps area with only some two per cent. bed accommodation for British troops and some five per cent. for Indian troops. As can now be appreciated the extra percentage of beds allotted in civil hospitals was of little value as the rapid retirement left the forward hospitals in the hands of the Japanese and the unreliability of the staff in those to the rear prevented such hospitals being utilised to any useful extent. But even had circumstances made it possible to utilise the accommodation thus provided the policy of having a comparatively small number of beds scattered in civil hospitals throughout the country would have led eventually to chaos. As reference has been made to the unreliability of the staff of civil hospitals; it is perhaps only fair to state that this did not apply in general to the doctors and nurses who, unless otherwise ordered, mostly remained by the side of their patients and showed great devotion to duty. It was the subordinate staff (a very essential part of the personnel) which disappeared, mainly due to anxiety as to the fate of their families and a desire to move them to safer localities.

CHAPTER V

Defence of Singapore Island

The final phase of operations—the defence of Singapore Island—now began. This phase was roughly divided into three periods; the first, a period of approximately one week of comparative respite except for Japanese air activity and shelling, was used by both sides in preparing for the coming attack; the second, a period of approximately four days, was marked by the Japanese landing on the west and north beaches of Singapore Island and the driving back of the defenders to the outskirts of Singapore town by attacks from the west, north and south-west; and the third, a period of defence of the perimeter line round Singapore town to which all the troops were forced to withdraw. The Fortress of Singapore was, much to the bewilderment of many of the troops, not a fortress in the accepted term of the word and they found that the work of preparing the beach defences had still to begin. Owing to direct Japanese observation this work had to be mainly carried out at night. Reserve stocks of food and ammunition were widely dispersed throughout the Island and the main source of water supply, which was in Johore, having now been cut off with the demolition of the causeway, Singapore was dependent on the reservoirs in the Island area. There was also considerable reorganisation of units and formations and the 9th Indian Division having ceased to exist was absorbed into the 11th Indian Division. By 5 January, the remainder of the 18th British Division had arrived in Singapore with 196 British Field Ambulance (197 British Field Ambulance by the *Empress of Asia*) and the defence of the Island was organised into three areas—northern, southern, and western.

Northern Area: (from excluding Ghangi to excluding Causeway).

18th British Division on right	196 British Field Ambulance 197 British Field Ambulance
11th Indian Division on left	38, 28 Indian and 198 British Field Ambulances

Southern Area. (from including Changi to including River Jurong)

1st Malayan Infantry Brigade on right	1 Malayan Field Ambulance
SSVF Centre (Singapore Town)	
2nd Malayan Infantry Brigade on left	4 Malayan Field Ambulance

Western Area: (from including Woodlands to excluding River Jurong)

27th Australian Brigade on right	2/10 Australian Field Ambulance
22nd Australian Brigade centre	2/9 Australian Field Ambulance
44th Indian Brigade on left	40 Indian Field Ambulance

Field ambulances were disposed and opened as required by local needs.

A total of 8,690 beds were available in hospitals from 1 February to 8 February. At first sight it might appear that the number of hospital beds available for the force, although on the meagre side especially for British troops, was not such as to give cause for grave concern, yet in reality it did and for good reason too. The first and most serious factor

was that, apart from 114 sick of the AIF evacuated on the *Origon* on 31 December no evacuation of casualties had taken place from Singapore since the beginning of hostilities. As a result the hospital accommodation at the commencement of this phase of operations was already nearly full of sick and wounded. Moreover, there was the second big factor, that much of the hospital accommodation which appeared on paper was in actual fact not available. This was due to several causes, the most important being that a number of hospitals (seven) had to be moved, some of them twice, on account of bombing, shelling and the advance of the Japanese. One of the hospitals had burnt out completely, while another (27 IGH) had lost all its equipment, except medical and surgical, up country. One large IGH of 1,000 beds, (40 IGH), which had only arrived on 29 January 1942 never really managed to get established until just before capitulation. After considerable delay in clearing its equipment from the docks owing to bombing and labour confusion (the ship in fact sailing again without unloading the medical and surgical panniers and certain other hospital equipment) it started to open in the Mental Hospital, north of Paya Lebar on 3 February, but by the time it had 200 beds ready to function it was shelled on 8 February and found itself dangerously near the front line. Therefore, it was moved to Tyersall Park on 10 February, where it was bombed and shelled out before it could function. It next moved to Raffles Institute on 12 February, where it opened 300 beds but, being short of equipment, it amalgamated with 27 IGH and by 14 February took 400 patients. The two hospitals had now 800 cases between them under most adverse conditions as the artillery was parked within 80 yards and its firing attracted Japanese attention. The position as regards accommodation was also complicated by the fact that the Indian, British and Australian troops had to go to separate hospitals. As there was no hope or expectation of any evacuation of casualties from Singapore, on any scale that could possibly affect the situation, conditions for the unfortunate patients fast became grim indeed. The congestion in the hospitals and the enormous pressure of work on the hospital staff, combined with their frequent movement on account of Japanese bombing and shelling, precluded the possibility of any degree of comfort or rest; and shortly there was to be added the hardship entailed by the failure of water supply and sanitary arrangements. The situation was aggravated by the departure of female nursing staff which had worked with remarkable courage under gruelling conditions. The AIF nursing sisters left on 10, 11 and 12 February and the British and Indian on 12 and 13 February. Very little help in the way of hospital accommodation could now be expected from the civil hospitals which were being rapidly filled by the heavy civilian air casualties from the intensive bombing of Singapore, and some of the outlying civil hospitals were seen to move also to the town area for protection. A few extra beds were, however, obtained by operating improvised hospitals in schools and other buildings with those field ambulances which were not able to function as field units owing to loss of equipment and transport. During the first week hospitals nominated to receive casualties—now passing direct from field ambulances to hospitals—were

mostly in a position to receive them. Later (with the exception of the AIF) the situation was to become chaotic, casualties having generally to be taken from hospital to hospital until one could be found which could take them in.

The position as regards military hospitals and field ambulances from 1 February to 8 February was as follows:—

Location of Hospitals and Field Ambulances 1 February to 8 February 1942

Unit	Location	No. of beds (approx.)	Remarks
Alexandra Military Hospital	Alexandra	450	A special hospital for venereal and skin diseases Originally 160
Auxiliary Military Hospital	Chatsworth Avenue	140	
Tanglin Military Hospital	Tanglin	250	
No. 1 Malayan General Hospital	Solerang	600	(not open; moved on 3 Feb to Mental Hosp., Paya Lebar)
No. 17 CGH	Changi	1,000	
No. 20 CGH	Gilman Barracks	650	
No. 27 IGH	Bidadari	400	
No. 12 IGH	Tyersall	1,000	
No. 40 IGH	Robertson Old Buildings	1,000	
No. 19 IGH	Marsiling road Woodlands	900	Moved to Woodneuk, Tyersal Park on 3 February
No. 1 Malayan CCS	Chinese High School	200	Not open
No. 5 Indian CCS	Chinese H.S.	200	
No. 2/10 AGH (AIF)	Oldham road School and houses	600	
No. 2/13 AGH (AIF)	St. Patrick's School	600	
No. 2/4 CCS (AIF)	Swiss Club	200	From 6 February
No. 2 British Convalescent Depot	Changi	500	At reception station & Kitchener Barracks
16 Indian Field Ambulance	Teck Hock Village Tampines road		Corps reserve. On 2 February moved to junction YCK-Thompson Rd; ADS 12½ MS W. Nee Soon; M.D. & 1 Coy. Opened 200 bed R.S. by 6 February

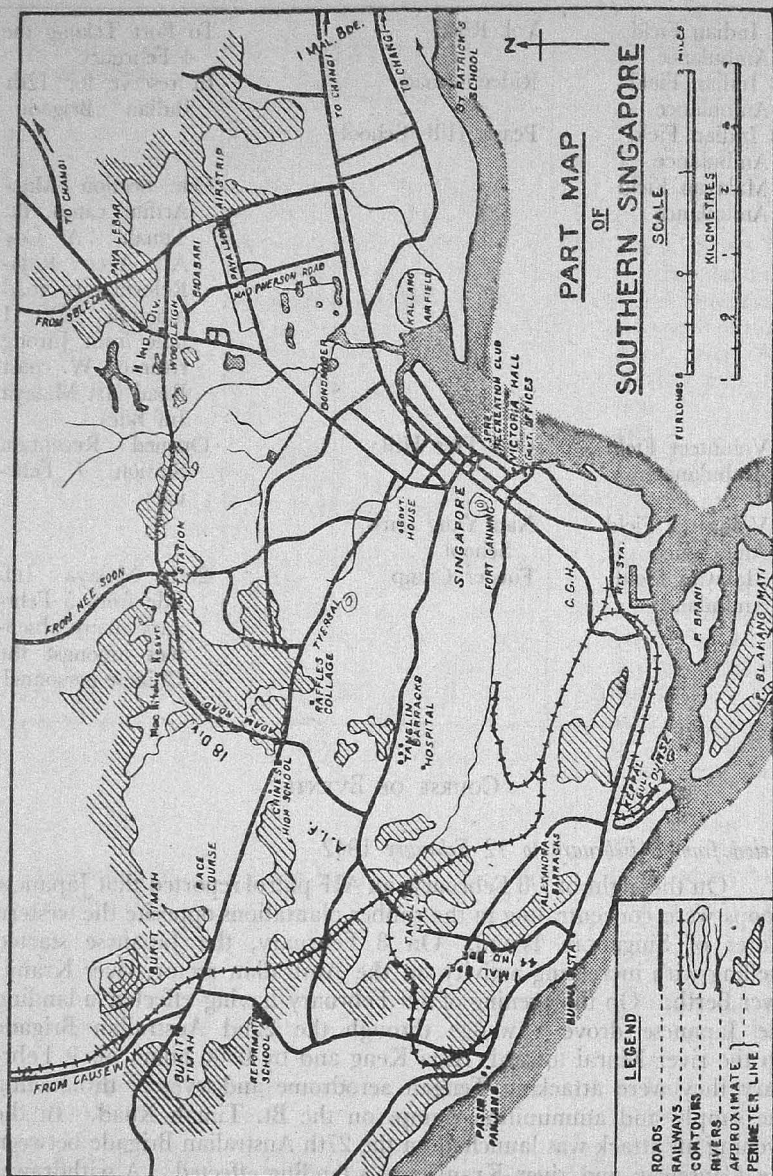
Units	Location	No. of beds (approx.)	Remarks
28 Indian Field Ambulance	Serangoon road near Paya Lebar to 2 February		MDS Kah Hoe San Est. Yok Rd from 2 February (for 6/15th & 28th Indian Brigades) ADS 200 yds S. Nee Soon; ADS Chong Peng, (with L/S ADS 198 British Fd. Amb.)
35 Indian Field Ambulance	Rideout Camp		Ordered to relieve 16 Fd. Amb. on 5th; Took over ADS and Reception Station on 7 February
196 British Field Ambulance	MDS at tented camp, 8½ MS Tampines road		ADS Mental Hospital Paya Lebar. ADS behind 5 Suffolks. ADS 10. MS. Tampines Rd. 4 Suffolk, ADS for Bedfs. and Herts. (served 54th British Brigade)
197 British Field Ambulance	Haigh Rd. (billets) from 7 February		Arrived on 5 February on <i>Empress of Asia</i> . Lost all equipment. Refitting from civil sources (for 55th British Brigade)
198 British Field Ambulance	Nee Soon		HQ Bidadari; MDS Nee Soon. ADS near Naval Base; Dets. with 28 Fd. Amb. (53rd. British Brigade with 11th Indian Division)
40 Indian Field Ambulance	Jurong Brick Works		44th Indian Infantry Brigade with 8th Australian Division
2/9 Australian Field Ambulance	Choa Chu Kang Road		22 Brigade AIF
2/10 Australian Field Ambulance	Bt. Panjang Village		27th Brigade AIF
15 Indian Field Ambulance	Somapan Village		

Unit	Location	No of beds (approx)	Remarks
27 Indian Field Ambulance	Yok Road		To Fort Tekong on 4 February
18 Indian Field Ambulance	Rideout road		In reserve for 12th Indian Brigade
43 Indian Field Ambulance	Pearls Hills School		
1 Malayan Field Ambulance			One Section MacArthur camp, Bt. Timah. ('A' Coy At Ayer Raja-Reformatory road junction ADS 1 mile from Jurong river on W. coast Road (1st Malaya Inf Bde)
2 Volunteer Field Ambulance	One Tree Hill		Opened Reception Station, 7 February
3 Volunteer Field Ambulance	Nan Yang Girls School		
4 Malayan Field Ambulance	Fowler Camp		2nd Malaya Inf. Bde from 5 February many absentees amongst the Chinese personnel

COURSE OF EVENTS

Period from 8 February to 12 February 1942

On the night of 7/8 February, an AIF patrol reported that Japanese troops were concentrating in the rubber plantations opposite the western shores of Singapore Island. On 8 February, the Japanese started shelling with increasing activity on the Australian sector, river Kranji-river Berth. On the evening of 8/9 February having effected a landing the Japanese drove a wedge through the 22nd Australian Brigade up the river Murai towards Ama Keng and by 0800 hours on 9 February they were attacking Tengah aerodrome and severely threatening the supply and ammunition dumps on the Bt. Timah Road. In the evening an attack was launched on the 27th Australian Brigade between the Causeway and river Kranji and a landing effected. A withdrawal on the night of 9/10 February by the 27th Australian Brigade to the vicinity of Bt. Bandai exposed the left flank of the 11th Indian Division. On 10 February, No 1 Malayan Brigade was attacked and its forward battalion driven back east of the river Jurong, 44th Indian Brigade taking up position one mile south of Bt. Timah village after confused



fighting. Fighting continued on 11 February in the Bt. Timah area and also developed against the 22nd Australian Brigade (now a few hundred men only) one mile south of Bt. Timah while to the South the Japanese penetrated as far as Buona Vista. During the day the Japanese troops also penetrated between the 28th and 8th Indian Brigade (11th Indian Division) towards Nee Soon village causing a readjustment of the line (River Seletar-Pierce reservoir) to protect the left flank of 18th British Division. All the food and petrol depots and dumps in the Bt. Timah area had been lost and there was only 14 days military food supply in the depots which remained under control. On 12 February, it was decided that the time had come to organise a close perimeter defence round Singapore town itself and the 18th British Division and 11th Indian Division were ordered to withdraw from the beach defences to occupy a position covering the water supply and linking up with the southern area north-east of the Kallang aerodrome. This was effected after the 8th and 28th Indian brigades had held up an attack by the Japanese Imperial Guards along the Nee Soon road. The 1st Malayan Brigade and the 44th Indian Brigade were attacked throughout the day and at night withdrew to a line on Tanglin Halt-Pasir Panjang village to conform with the situation on the right. All troops in Changi area and on the beaches to the east of Kallang aerodrome were withdrawn to the Singapore defences and by the night of 12/13 February the perimeter defences of Singapore town were occupied. The Japanese had thus in four days after landing driven back the beach defences from the north, the west and the south-west coasts on to Singapore town itself. During this period various, mostly small, forces were moved from units and formations to fill up gaps in the line or to meet new threats, with consequent mixing of formations, and field ambulances or portions of them were constantly moving on all fronts in conformity, while others were bombed or shelled out of their positions. As can be readily appreciated conditions had by this time deteriorated rapidly in every respect on the Island.

Singapore town had suffered many air raids with heavy civil casualties and the civil hospitals were full. Pearl Hill and Fort Canning reservoirs were empty and breaks in the mains from bombing and shelling were exceeding the repairs, water at low pressure now only being available in certain streets and ground floor levels, while from the burst mains water was running to waste at many places. Most of the civil labour had disappeared and the sanitary services had failed. Debris from the bomb blasted and damaged buildings remained uncleared and the dead were left unburied.

During this period many of the hospitals had been shelled and bombed and had to be moved. 12 IGH at Tyersall Park had been bombed and set on fire on 11 February. It had been requested that this area should be treated as a hospital area but for military reasons this could not be possible and British troops arrived and took up defensive positions there parking carriers and occupying trenches around and between the wards and in the area of 15 Indian Field Ambulance. In the early afternoon of 11 February, the hospital was bombed and the fracture ward receiving a direct hit. As this hospital was accommodated

in *attap* huts and as oil bombs had been used fires started immediately and spread at a rapid pace. The CO 15 Indian Field Ambulance helped by two officers and some BORs removed what wounded they could but there was a large number of helpless patients, some of whom were killed outright, and although many were removed by this party yet others were left as it rapidly became impossible to enter or even approach the wards. Many of the patients able to move took to the trenches where about thirty of them died as they could not leave when lorries parked in the area caught fire and the ammunition in them started exploding. These patients were trapped by burning buildings collapsing on them. Meanwhile, Japanese planes were machine gunning the area. Altogether some 200 patients were killed in this hospital during the raid. The failure of the water supply made the efforts of any fire fighting squads futile and in any case the huts were of such highly inflammable material that it is doubtful if they could have made any useful impression on the fire. By 12 February, the hospital was established in the Registrar of Vehicles Buildings but after being again bombed two sections moved next day to Mount Sophia. 17 CGH was also involved in this catastrophe; both hospitals being finished for future use as hospitals for the remainder of the operations. The latter of these (17 CGH) had been evacuated from Tanjong Malim on 30 December 1941 and had opened 600 beds (150 British) in Roberts Barracks, Changi by 3 January 1942, though it was capable of doing only minor surgery at the moment. On 11 January, it had 950 beds in use (330 British) and after that date had rarely less than 900 patients; a big strain on the staff which was not increased until 21 January. On 7 February, the first heavy pattern bombing of Changi occurred; the hospital receiving three direct hits. There were no casualties amongst the patients but eight members of the staff were killed and six wounded. The water, lights and telephones were all cut off. There were, however, many casualties from the area and operating and transfusion teams were working from 1430 hours to 2200 hours. One surgical team was sent over from No 1 Malayan General Hospital. Next day on 8 February, the hospital was again bombed but it might have been due to the artillery gun park in its vicinity, containing oil and petrol dumps and a number of parked vehicles, which was probably the real objective. There were a number of casualties again amongst the personnel and many of their huts and the OC's office were destroyed. The patients (850) were soon evacuated and the hospital started packing to move. 9 February saw the third pattern bombing of Changi and this time No 1 Malayan General Hospital (1 mile away) was severely damaged.

At dawn on 11 February, 17 CGH, having evacuated its British patients to 1 Malayan GH and the Indians to 12 and 19 IGHs moved to Tyersall Park where it opened 250 beds for Indian patients in tents and 50 beds for officers at Woodneuk (The Sultan of Johore's Palace). By the afternoon it had been set on fire in the bombing raid and destroyed but fortunately had not had time to receive patients. The personnel was then distributed among the hospitals in Singapore. On 12 February, the equipment was salvaged from Woodneuk (150 beds and operating theatre) and moved to a school at the civil airport.

The personnel and part of the equipment were moved to the Union Jack Club and the Registrar of Vehicles Buildings; the latter were very congested being occupied by personnel of 12 IGH and were badly damaged by shell fire next day. Any efficient work here was impossible as nearly all medical and most ordnance stores had been lost by bombing and fire, but on the night of 11 February a surgical team had been sent to 27 IGH. The food situation as regards the unit had also become difficult as the reserve supplies taken from Schangi had been destroyed and a lorry sent in charge of an officer was not heard of again. However, on 13 February by assembling all the equipment fifty beds were opened, the operating theatre being in the ground floor lavatory of the building. On this day the nursing sisters were evacuated from Singapore, heavy bombing of the docks occurring during embarkation with many military casualties. By 15 February, this hospital had beds equipped for 200 and the surgical team sent out on 11 February had also returned though another team had been sent out to No 1 Malayan General Hospital at Victoria Hall. Up to this time 17 CGH had dealt with approximately 2,700 casualties since 8 December.

Thus three hospitals and one field ambulance—40 IGH, 12 IGH, 17 CGH and 15 Indian Field Ambulance—all had suffered severely and been crippled badly in this disastrous bombing of Tyersall Park. Three other hospitals were also forced to move during this period owing to bombing and shelling. 27 IGH which had been evacuated from Kuala Lumpur to Singapore on 13 January and had opened 600 beds at Bidadari by 1 February was one of those forced to move owing to the situation which had developed in the last few days. On 10 February, it disposed of its cases to 19 IGH, 12 IGH and various field ambulances and sent one section to Raffles College with 180 patients that night. By 11 February conditions there had become so bad that the remainder of the hospital moved to Raffles Institute which it shared with 40 IGH and by midnight had 300 sick and wounded. Henceforth, its theatre and surgical detachments (including one surgical team lent by 17 CGH) worked continuously at full capacity as the number of surgical cases admitted increased rapidly. Just after capitulation an ammunition dump in the vicinity caught fire and all patients who could move disappeared. No 1 Malayan General Hospital which had been evacuated from Johore Bahru at the end of January to Sellerang (Changi Area) after disposing of its 200 patients to Alexandra Hospital, took over barracks which had been left in a filthy condition and which the sisters and VADs cleaned as the Asian water carriers, sweepers etc., had remained behind on the mainland. The nursing staff consisted of eight QAIMNS and thirty-five EMNS (VADs). After heavy bombing in the vicinity which cut off the lights, water and telephones, an influx of local air raid casualties was received in addition to most of the British patients of No 17 CGH which had been badly damaged. But on 9 February, No 1 Malayan GH was itself to experience the full and damaging effects of one of those devastating pattern bombings and suffer a number of casualties amongst its own personnel. It was also found that 2 Malayan Infantry Brigade HQ had moved back seven miles without notifying the hospital which had been for the past twenty-four hours in

the direct line of fire of both the British and the Japanese guns. It was, therefore, moved on 10 February to the Singapore Cricket Club grounds but did not open there. There was much confusion and the nursing staff was sent to the Alexandra Hospital. By the evening, however, the OC had opened a hospital of 200 beds in the Victoria Hall and by the next day 100 beds were ready. By this time many of the patients had been moved from hospital to hospital. It was unavoidable in some cases where it had been due to bombing but in other cases it had been due to the practice of transferring patients from other hospitals to make room for new convoys. Owing to this constant moving of patients several cases of acute malarial infection were overlooked. The upper floor of Victoria Hall was unsafe during air raids and the patients became uneasy and panicky, so the medical officers slept in the wards as the female nursing staff had been sent away. Government offices were also taken over for the convalescent cases and a requisition was put in for the Old Government Buildings (Motor Taxation Office and Infant Welfare Centre). On 11 February, this hospital was joined by the Tanglin Military Hospital, a special hospital for venereal diseases and skin cases, which opened 200 beds in Victoria Theatre—a total now of 400 beds of which 342 were occupied. On 12 February, it was found that the requisition for the Old Government Buildings had not gone through so Fullerton Buildings and the Singapore Cricket Club were surveyed. Next day, 13 February, the hospital took over the Fullerton Buildings and had then in its occupation Victoria Hall, the Victoria Theatre, Government Buildings and Fullerton Buildings all in use. Surgical cases were coming in large numbers and the surgical theatre in Fullerton Buildings was working to capacity with three teams. In addition, teams from field ambulances opened up a theatre. From this time to the end of hostilities the hospital worked with guns, troops and vehicles parked all round the buildings and had great difficulty in getting a supply of water. Additional help was received on 14 February from the personnel of 197 British Field Ambulance, and by 15 February this hospital had dealt with 1,459 patients. 19 IGH which had been established at Marsiling road at Tyersall Park on 3 February, lost nine in killed in a bombing raid on 5 February. It had just got ready to take 300 patients in tents when it was ordered to move on 9 February to Oxley road, near Fort Canning. On 11 February it took in patients from 12 IGH (which had been bombed and set on fire) and had a surgical unit functioning at Oxley Rise.

Apart from the various forced moves of the above six hospitals, four other medical units also had to change their locations on account of Japanese action. These were 5 Indian CCS, No 1 Malayan CCS, 2/4 CCS and 2/10 AGH. 5 Indian CCS had opened a hospital for 200 beds at the Chinese School but was moved on 9 February to the Asiatic Petroleum Co's Bungalows in Pierce Road after handing over 163 patients (135 British and 28 Indian) to No 1 Malayan CCS. It was receiving patients again by 10 February in its new site but was forced to move to the Union Jack Buildings on 13 February after evacuating 139 patients to the Raffles Institute. It again suffered a number of casualties (2 Indian Hospital Corps personnel killed, 8 British and 20 Indian

wounded) on 15 February in its new location. On 9 February, No 1 Malayan CCS took over the 200 bed hospital from 5 Indian CCS with 163 patients and on 10 February received 118 more (100 from No 1 Malayan General Hospital). On 11 February, it received orders to stay in its present location (Chinese High School) and be captured, should such eventuality arise, but an oil pipe line in the vicinity was set on fire at 1000 hours and as the wind was blowing towards the hospital walking cases were sent to the Mixed Reinforcement Camp and the unit was ordered to move to Raffles Institute. More than half the Chinese personnel had deserted. The remaining patients were sent to No 1 Malayan General Hospital at Victoria Hall but there was much confusion of orders and after stores and equipment had been despatched to Raffles Institute the unit was finally ordered to St. Joseph's Institute. On 12 February, this unit had 230 AIF many of them NYD (N). 2/10 AGH (AIF) moved on 12 February to the Cathay Buildings, Singapore town and 2/4 CCS (AIF) moved on 10 February to Gillstead road and on the 12th to St. Andre's Cathedral.

The numerous movements of Field Ambulances during this period are given below:—

*Location of Hospitals and Field Ambulances
8 February to 12 February 1942*

Unit	Location	Remarks
Alexandra Military Hospital	Alexandra	Unchanged
Auxiliary Military Hospital	Chatsworth Avenue	Unchanged
Tanglin Military Hospital	Tanglin	On 11 Feb joined No 1 Malayan GH at Victoria Theatre
No 1 Malayan General Hospital	Selerang	On 10 Feb to Victoria Hall
No 17 CGH	Changi	On 11 Feb to Tyersall; on 12 Feb opened at Union Jack Club
No 20 CGH	Gillman Barracks	Unchanged
No 27 IGH	Bidadari	On 10 Feb to Raffles College. On 11 Feb to Raffles Institute
No 12 IGH	Tyersall	On 12 Feb to Registrar of Vehicles Buildings
No 40 IGH	Paya Lebar	On 10 Feb to Tyersall; on 12 to Raffles Institute
No 19 IGH	Tyersall	On 9 Feb moved to Oxley road near Fort Canning
No 1 Malayan CCS	Chinese High School	On 11 Feb to St. Joseph's Institute
No 5 CCS	Chinese High School	On 9 Feb to Asiatic Petroleum Co's Bungalows Pierce Road
2/10 AGH (AIF)	Oldham Rd School	On 12 Feb to Cathay Buildings
2/13 AGH (AIF)	St. Patrick's School	Unchanged

Unit	Location	Remarks
2/4 CCS (AIF)	Swiss Clun	On 10 Feb to Glistead Road on 12 Feb. to St. Andrew's Cathedral
No 2 British Convalescent Depot	Changi	On 10 Feb to Hong Kong Estate
16 Indian Field Ambulance	Rideout Road	On 10 Feb serving 15th Bde Bt Timah area, ADS Bt Timah Rd. Car Posts with Bde HQ at 2200 hrs. ADS cut off from Bde on 11 February ADS recalled and unit moved Serangoon Rd. On 12 February unit moved to vicinity of Raffles Institute
28 Indian Field Ambulance	YCK road	On 10 February to Thompson Rd. leaving ADS 1/2 m. N of Chickabu camp. On 12th unit complete at Tan Tock Sen Hospital
38 Indian Field Ambulance	Junction YCK-Thompson Rd.	On 10 February to 5½ m Thompson Rd. (Chinese Cemetery). ADS W. Nee Soon cut off from Bt Timah area. On 12 February unit to Tan Tock Sen Hospital
196 British Field Ambulance	Tampines Road	On 12 February to Beauvista Thompson road, ADS, Mount Pleasant. Out of touch with 54th Bde and 18th British Div HQ
197 British Field Ambulance	Haigh Road	On 10 February MDS at Tanjong Kempong road, ADS (Tomforce) Bt Timah Rd. ADS (Masseyforce) to Denham Rd. then Braddle Rd. on 12 February
198 British Field Ambulance	Nee Soon	ADS u/o 53rd Bde on 11 February Unit moved to Bidadari on 12 February
40 Indian Field Ambulance	Jurong Brick Works	On 9 February to Junction Bt Timah-Hollang road. Lost touch with Bde and moved to vicinity 13 AGH. On 11 February 44th Bde. contacted and ADS opened at Bde HQ
2/9 Australian Field Ambulance	CCK	On 9 February to Race Course Area. On 10 February to Swiss Rifle Club and on 11 February to Barker road.

Unit	Location	Remarks
2/10 Australian Field Ambulance	Bt Panjang village	On 12 February to Oldham Rd. School and later to St. Andrew's Cathedral grounds Moved as above
15 Indian Field Ambulance	Somapah Village	On 10 February moved to Tyersall Park and on 12 February to Mount Emily
27 Indian Field Ambulance	Fort Tekong	Unchanged
18 Indian Field Ambulance	Rideout Road	On 9 February B Coy with 12th Bde vic Bt Panjang. On 11 February out of touch with Bde Unit moved to K. K. Hospital at 1800 hours
43 Indian Field Ambulance	Pearls Hill School	Opened a hospital for 300 beds. ADS for 1 and 2 Mayalan Regts. Moving on West Coast Road to ADS in Tanglin Hospital on 12 February
2 Volunteer Field Ambulance	One Tree Hill	
3 Volunteer Field Ambulance	Nan Yang Girls School	Moved on 11 February to St. Joseph's Inst. Personnel to 1 Malayan CCS
4 Malayan Field Ambulance	Fowler Camp	On 12 February Unit to Singapore Recreation Club Building less 4 Officers, 4 NCOs and 60 Chinese ORs to Alexandra Hospital

Period from 13 February to 15 February

During the next few days fighting occurred along the line of the perimeter defences but particularly in the western part of the Southern area where the defenders were driven back to the Alexandra-Keppel Golf course line and where one of the most unfortunate incidents of the campaign took place. At this stage the orders for most hospitals were that they should remain in position and be captured unless they were suffering heavily from air attacks or danger from fire due to burning oil tanks or burst oil pipes in the vicinity. On 14 February, therefore, Alexandra Hospital still remained in position although on 13 February it was between the lines and under cross fire. The lights and telephones were not functioning and it had been necessary to evacuate the top floor of the hospital. The Japanese were attacking from the Ayer Raja Road direction and by 1300 hours on this day were approaching the hospital from the direction of the sisters quarters. Suspecting that

they had been fired upon from the hospital, which was strengthened by seeing some unarmed Indian Sappers returning through the hospital the Japanese entered the building in spite of the Red Cross signs displayed there, bayoneted two officers, one NCO one BOR and a few patients, and dragged out many others who were alleged to have been shut in small rooms for the night. On 15 February, there was no relief from the most unfortunate and reprehensible ill-treatment, which was aggravated by looting which had then started. But on 16 February, a high Japanese officer probably a DDMS visited the hospital, stopped looting and placed a guard for its protection. He also complimented the staff for its splendid work. The next day the Japanese GOC called at the hospital and expressed regret for the hardships imposed on them and assured the staff that there was no further reason for any fear. By that time 4 officers and 6 BORs had been killed and 10 officers and 73 BORs were missing.

A similar incident had occurred in another hospital but fortunately not with such disastrous results. 20 CGH was accommodated in Gillman Barracks within half a mile of Alexandra Hospital and until 12 February it had not displayed a Red Cross sign as till then its 'A' block was occupied by the Loyal Regt. This hospital had 350 beds for IT and 300 beds for BT and a staff of 5 RAMC officers, 10 IMS and 22 QAIMNS and IMNS. On 9 February, the hospital opened another 150 beds although on 10 February it had only 450 patients as a number of them had been selected for evacuation by the *Wu Sueh*. On 12 February, the day the Red Cross was displayed, the hospital was hit by shell fire, the shelling increasing in intensity all through the next day; buildings being hit heavily and the water supply and latrines being put out of action. Conditions continued to deteriorate during the next two days and on 15 February when water parties were collecting water from the swimming pool to store in the bath house they were fired on by the Japanese troops. All personnel, and patients who were able to be moved, were then ordered out of the hospital and locked in the flour godown. They were not released until 17 February when it was found that the condition of the patients left behind was pitiable as they had received little food, water or attention.

In the case of both No. 1 Malayan General Hospital (at Selerang) and 20 CGH (at Gillman) which were accommodated in barracks there seems to have been doubt as to whether, under the circumstances, they were entitled to display a Red Cross flag. Permission to do so appears to have been given as soon as the troops occupied any part of the buildings; but as in the case of both these hospitals, field and AA artillery was firing in close vicinity, their chances of escaping Japanese attention were remote. In contrast to the experiences of military hospitals there is the experience of a civil hospital. The hospital from the second week received front line casualties in increasing numbers. On 13 February, the water supply failed and by 15 February it could not have functioned much longer. It had beds for 1,500 patients but had approximately 3,500 cases in all of which about 1,500 were military cases. This hospital estimated that civil casualties were in the region of 20,000 and stated that Japanese respect for the hospital was outstanding for although

bombing was incessant yet not one bomb fell in the hospital area during the hours of daylight.

In the meantime during those last few days attacks and counter attacks continued in the 18th Division and 11th Division areas. The Japanese had the benefit of direct observation from the Bt. Timah hills and heavy fire could be directed on selected areas. The water situation was worse as with no labour the burst mains could not be repaired—the civil labour had gone and the RE troops were in the line and some time was required to recall them and organise the work on the water supply. Ammunition and food were also dangerously low owing to the loss of depots. Sanitary services had broken down and all public services were practically at a stand still. A heavy attack on the extreme left could have led at any time to a break through into Singapore town itself and Japanese Infantry had already infiltrated into all sectors of the 18th Division front. As has already been indicated the lower floors of almost all large buildings were occupied by hospitals and were already full. The Asian population was indifferent to the danger and casualties amongst them were extremely high. In conditions such as these the decision to capitulate was made and took effect at 2030 hours on 15 February.

During these last few days field ambulances had mainly functioned in the grounds of various large civil hospitals with artillery parked in their vicinity which drew a large amount of Japanese fire on the area. The consequence was that all medical units worked under very difficult conditions and many of them were badly hit. Personnel of the field ambulances were also assisting in the civil hospitals which had been considerably depleted of staff and were also taking in military cases. Some of these hospitals which were in the vicinity of the perimeter had to move into the town area, the Field Ambulances helping with the transport of their cases. 43 Indian Field Ambulance Hospital, in spite of heavy bombing and shelling over Pearl Hill School area and shortage of water, continued to work there till 3.30 p.m. on 15 February. Evacuation of all the 350 patients and staff was completed the same evening to Raffles Hotel, Singapore, except for 3 missing personnel of the unit and loss of some documents and equipment on 15 February 1942. Some of the field ambulances were used to form temporary hospitals in buildings whilst others were amalgamated with units such as CCS, or even hospitals which were otherwise unable to function to their full capacity owing to loss of equipment. Although hospitals were withdrawn into the town area they were far from immune from the effects of Japanese shelling and bombing causing many casualties amongst both staff and patients. They did, however, receive protection from Japanese troops. The hospitals, military and civil which were functioning found great difficulty in accommodating the number of sick and wounded coming in. Passages and hallways were packed and in some hospitals difficulty was being experienced in feeding and dressing the cases. In the operating theatres all attempts to maintain aseptic technique had to be abandoned with the failure of the water supply and there can be little doubt that capitulation came just in time to save a general medical breakdown with the

certainly of an epidemic of intestinal diseases. This is supported by the length of time it took to get the water supply re-established (10 days to reach the General Hospital and 5½ days with engineers and water parties working at full pressure, to restore water to the lower levels of Singapore town) and the epidemic of dysentery, fortunately mild, which did occur after capitulation. In spite of all hardships the morale of both patients and personnel was very high. There was no sense of panic noted even amongst the patients.

Capitulation was to bring no great amelioration in their conditions for the sick and wounded; in fact in many respects conditions were to become worse—the food shortage and frequent interference by the Japanese—but in one respect there was to be an immediate and marked change for the better, viz., a relief from the constant strain of being bombed, shelled and machine-gunned. Towards the end, conditions were depressing in the extreme as during the day large clouds of smoke caused by the burning oil tanks hung over the area of Singapore town, covering everything with particles of oily soot and at night the flames of large fires from burning dumps and warehouses lit up the whole area. After 12 February, there were few changes in the locations of hospital units. No 1 Malayan General Hospital expanded on 13 February by taking over the Fullerton and Old Government Buildings in addition to the two already in use viz., Victoria Hall and Theatre. It was joined on 14 February by No 2 British Convalescent Depot, which had suffered fairly heavy casualties, and which now took over the convalescent section of the hospital, 466 beds, in the Old Government Buildings. 5 CCS had to move on 13 February from Pierce Road to the Union Jack Buildings and 12 IGH, after being again bombed at the Registrar of Vehicles Buildings sent two Sections to Mount Sophia. 2/10 AGH in the Cathay Buildings, the top floor of which was occupied by the III Indian Corps, was full and suffered severely when a bomb passed through the roof of the convalescent ward killing and wounding many. The constant moving of hospitals during operations on Singapore Island interfered very considerably with the proper care and treatment of the patients, as apart from the expenditure of time and energy in frequent moves of the cases from one hospital to another, there was also caused considerable confusion often through equipment going to one place and personnel to another. Towards the end losses of equipment, mainly through bombing and shelling became quite serious. Medical supplies, in spite of losses, fortunately never gave rise to anxiety though sometimes there was much delay in units getting them. This is not to be wondered at as Base Medical Stores Depots were constantly moving in an effort to save their supplies. No 1 Base Medical Stores Depot at Tanglin moved on 10 February to a godown in River Valley Road, Read Bt., and on 12 February again moved to the Cathay Buildings, its stores being transferred by 14 February. No 2 Advance Medical Stores Depot was attached to the above having lost its stores on the journey from Kuala Lumpur to Singapore. No 3 Advance Medical Stores Depot (AIF) moved from the Holy Innocents School on 12 February to join 2/4 CCS, No 8 Advance Medical Stores Depot moved from the H.I. School, Serangoon on 9 February to Tanglin and then moved again with No 1

Base Medical Stores Depot.' The transfer of patients during the moves of most hospitals was carried out mainly by No 1 Malayan MAC.

Location of Field Ambulances from 13 February to 15 February 1942

Unit	Location	Remarks
16 Indian Field Ambulance	Raffles Institute	On 13 February moved to Recreation Club; on 14 February personnel disposed to:—17 IGH 60 to 44 Ind Fd Hyg Sect for grave digging, remainder to 197 Br Fd Amb at Municipal Bldgs
28 Indian Field Ambulance	Tan Tock Sen Hospital	Unchanged
38 Indian Field Ambulance	Tan Tock Sen Hospital	On 13/14 February to Civil General Hospital
196 British Field Ambulance	Thompson Road	On 13 February MDS moved at 1600 hrs. to City High School; ADS junct. Balmoral-Bt Timah Rd. ADS Suffolk to Cree Hall. ADS (Tomforce). Withdrawn on 14 February with difficulty under protection of one Coy of force. On 15 February ADS—Good wood Park Hotel
197 British Field Ambulance	Tanjong Kampong Road	To Municipal Buildings on 13 February and established a hosp. with 198 casualties
198 British Field Ambulance	Bidadari	On 13 February to Tan Tock Hosp. ADS vicinity Braddie Rd. Rejoined on 14th at TTS
40 Indian Field Ambulance	Oldham Road	On 18 February to Raffles Institute
2/9 Australian Field Ambulance	St. Andrew's Cathedral	On 14 February opened an operating theatre in Adelphi Hotel
2/10 Australian Field Ambulance	As above	As Above
15 Indian Field Ambulance	Mount Emily (behind Govt. House)	On 13 February to Outram Road; Surgical team to Civil Hospital
27 Indian Field Ambulance	Fort Tekong	Unchanged
18 Field Ambulance	K. K. Hospital	Opened MDS. Treated over 1,000 civil and military casualties
43 Field Ambulance	Pearls Hill School	On 15 February opened in Raffles Hotel (Ballroom)
1 Malayan Field Ambulance	Tanglin	On 14 February OC (Lt. Col. Clarke) killed. Moved at night to St. Andrew's Cathedral
2 Volunteer Field Ambulance	One Tree Hill	On 14 February moved nearer town leaving two L/S ADSs behind

¹ The OC (Lt. A. E. Lewis) was fatally wounded unloading stores at Tanglin on 10 February.

Unit	Location	Remarks
3 Volunteer Field Ambulance	St. Joseph's Institute	Moved here owing to danger of fire
4 Malayan Field Ambulance	Recreation Club	On 13 February to Nan Wah School (behind Cathay) and opened 200 beds. By 15th, 150 occupied

With 4 Malayan Field Ambulance about 70 Chinese personnel remained to the end. All of these did very good work as also those sent to Alexandra Hospital on 12 February and very few of them showed any sign of panic. On capitulation about forty deserted. As was the case with all locally enlisted personnel they had their families in the neighbourhood and as many of these were bombed out and became homeless, the men were anxious about their fate. Towards the close of operations an effort was successfully made to evacuate a number of casualties from Singapore, being sent away on the ship *Wu Sueh*. This ship was a small Yangtse river boat brought over to Malaya and converted there for the purpose of conveying patients from Penang and West Coast ports of Malaya to Singapore. By the time it was ready it was too late to use it for this purpose and with its shallow draft it was considered unsafe for an ocean voyage in the monsoon. It was not until the middle of December 1941 that this ship had been staffed and fitted out for sailing (coastal work). In January 1942, she was laid up for further alterations, the idea being to use the ship for wounded POW. On 13 January, she took in convalescent patients and had five sisters on the staff. After taking 56 chronic skin cases from No 1 Malayan General Hospital on 25 January orders were again received to alter the accommodation so as to take 150 British, 94 Indian and 6 PsOW. By 10 February, she was alongside in Keppal Harbour where she embarked 306 patients (the majority stretcher cases, 126 being AIF and 93 Indians) and 22 nursing sisters and VADs. She sailed on 11 February and arrived at Tanjong Prick Batavia on 14 February where she embarked the patients on Hospital Ship 36 (Karapara). Twice, on her voyage across Japanese planes flew over the *Wu Sueh* evidently examining her closely, but they did not interfere with her. On 15 February, the nursing sisters were disembarked at Batavia and 132 patients were loaded on 24 February on the ship sailing for Colombo on 25 February and arriving there on 4 March 1942 where she discharged 44 AIF. The remainder were taken round to Bombay, where she reached on 9 March, the ship sailing later to Karachi.

The question arises whether evacuation of casualties from Singapore could have been carried out if hospital ships had been available. There is evidence to support the view that the Japanese did respect the Red Cross—at Tanjong Malim, at Seremban (two hospital trains), the civil General Hospital at Singapore and in the case of the *Wu Sueh* there is evidence that these units remained unmolested, whatever the reason, when without question their liquidation would have been a simple matter. In other cases where medical units were bombed or shelled they were

either located in the midst of artillery or military dumps or in some cases were occupying barracks which had just been vacated by the troops. In the case of Alexandra Hospital and 20 CGH the Japanese seem to have had suspicions that they had been fired on from these buildings. This is not stated in any extenuation of their conduct at these two hospitals, for their behaviour, whatever the circumstances, was unpardonable. At all times the conduct of the Japanese was, however, unpredictable. At Muar the AIF asked permission to evacuate their seriously wounded, as all attempts to recover them were made impossible by the Japanese shelling but it was refused. On the other hand their behaviour at Batu Pahat and in the sinking of *Repulse* and *Prince of Wales* was reasonably correct. It is probable, however, that any ship organised and clearly marked as a hospital ship would have been left unmolested provided that it was docked apart from other shipping, vital to the needs of the campaign. Early evacuation would at least have prevented the congestion in hospitals at the end and enabled the final phase to begin with more accommodation. Many helpless cases could have been got away and the numbers of those requiring a maximum of nursing and attention reduced. The decision to withdraw all troops from the mainland should have inspired an effort to evacuate the more serious sick and wounded. Many lives and much suffering would have been thereby saved. The need to take steps for the early evacuation of casualties was all the greater in view of the fact that Malaya was not adequately prepared when hostilities began.

There is the alternative question of an area being set aside as a 'Hospital area' in the final stages. One point has emerged clearly and that is the impossibility of hospitals remaining immune in a battle area. As long as they are kept in the vicinity of troops and artillery engaged in active operations, bombing and shelling, even if unintentional, is bound to occur. Only if hospitals are located away from the vital requirements of a campaign—main railways, docks and supply or ammunition depots—is there any reasonable chance of their escaping hostile attention. In Singapore their only chance of remaining unmolested would have been in a declared 'Hospital area'. These facts have been long established as basic principles but perhaps in modern warfare it is no longer possible to give them other than cursory consideration. To have established such an area in Malaya before hostilities would not have been practicable. Apart from the fact that no suitable area was available, which would not have become inaccessible as the operations progressed, it would have involved extensive building at a time when neither the labour nor the material was available. In the final stages of operations in Malaya conditions were different and a 'Hospital area' would have been, in the absence of any means of evacuation casualties, the only hope of giving the patients reasonable immunity from hostile action. The area, however, would almost inevitably have been in Japanese hands before capitulation.

CASUALTIES, SURGICAL CONDITIONS DURING THE FINAL PHASE AND MEDICAL EQUIPMENT

As has already been explained, circumstances prevented any,

even approximately correct, estimation of the number of casualties incurred by the Allied forces during the campaign. The following figures are, however, interesting.

In the RAF there were 1,013 killed and 1,201 wounded in action; 112 died of wounds before capitulation and 23 died of wounds after capitulation. On the mainland the III Indian Corps only received returns from six out of twelve field ambulances which were on the mainland at some period or other. These returns showed that 6,500 cases were handled by the six field ambulances and of that number approximately 50 per cent were battle casualties. Including civil cases some 10,000 sick and wounded were evacuated from the mainland. In Singapore, on capitulation there were some 9,000 sick and wounded. The records of the following Regiments can be taken as typical.

4 Norfolk Regt

Feb	Killed	Wounded	Missing	(Known wounded)	Missing (Incl. believed killed)	Total
11	29	21	2	6	22	80
12	4	25		2	23	54
13	9	29		2	10	50
14	4	30			1	35
15	4	9			20	33
Total	50	114	2	10	76	252

2 Loyal Regt

This unit was employed during the last two weeks on the mainland during which period its original strength was practically halved. On withdrawal to Singapore Island it was sent to Blakang Mati until 12 February when it was brought back to Singapore and during the last two days of operations found itself in the rather ironical position of defending its peace-time barracks. Casualties recorded were between 450-500, most of the casualties being walking cases. 40 were known to have been killed, 100 were wounded and over 300 were listed as missing. GSW (bullet, shell or bomb) Arms 19; Legs 25; Abdomen 1; Chest 18; Hand 17; Fractures (Major) 3; and Amputations 6. These figures support the impression that the proportion of killed to wounded was far greater in these operations than the generally accepted proportion for previous campaigns and that the number of missing was high in proportion to both. The figures for missing undoubtedly included a number of killed and unrecovered wounded. As previously explained, the chances of wounded being recovered, other than those able to walk when first wounded, were small on many occasions. Only in the more static phases of operations or when in the vicinity of transport could the more seriously wounded be recovered.

The following notes of the surgical specialists of two general hospitals during the final phase also help to throw light on the nature of casualties.

No. 1 Malayan General Hospital

Selerang Barracks, Changi: Cases received direct from field ambulances were mostly air casualties. Two surgical teams with two surgeons and anaesthetists worked 24-hour shifts. The resuscitation ward was next to the theatre and the admission officer notified the surgical team or the resuscitation ward as necessary. Moribund cases were kept in the admission ward. In the resuscitation ward there was one surgical and two medical officers and a sister. Cases for operations were sent to the surgical reception ward, and the top floor was kept for walking cases only. The theatre block had X-ray, resuscitation and operating theatres and one for septic cases only. By 6 February this hospital had 194 patients in its new location.

Victoria Hall: Cases received here were mostly bomb, shell, small arms and bayonet wounds. At this location three teams of two surgeons and two anaesthetists worked on 8-hour shifts with 24 hours off i.e., three different periods of 8 hours on and then 24 hours off.

Fullerton Buildings: Drugs of Sulphonamide type were not used locally or by mouth. Wounds were left open after excision and covered with sterile vaseline gauze. Most wounds became infected. There was quite a high incidence of secondary haemorrhage during the six to twelve-day period after a wound was received. Sepsis and open wounds accounted for most. Lack of X-rays also accounted for some as in a case where a foreign body was afterwards found near a vessel. Flap amputations were performed with no sutures and sterile vaseline dressing over the wound. Later, traction was applied to the skin by strapping. A few had mattress sutures through the skin with the wound left open. These did well. In most cases reamputation was needed. All abdominal injuries needed resuscitation. Results were disappointing. Gas gangrene was especially noticed after unpadded plaster for fractures. Most cases died. In compound fractures of the thigh and leg it was found better to use Brauns splint and skeletal traction in order to observe local signs. In gas gangrene of groups of muscles, excision in arm and leg did well. Gas gangrene of wounds occurred but did not give rise to a spreading infection. Five cases of tetanus were seen all of which died. Incubation period was about 5-7 days. There was no response to treatment and one case was due to a fairly superficial wound of the foot. Wounds of the head did well. Shaving and cleaning was most important. If not done sepsis was inevitable. There was a large number of wounds of the knee joint due to bomb and shell wounds. All did badly and required amputation afterwards through the thigh. Wounds of the elbow and shoulder joints did well but wounds of the ankle and tarsal joints did badly on account of difficulty in getting free drainage. Even the smallest burns required radical treatment in order to avoid sepsis. Cleansing with saline and then tulle grass or sterile vaseline dressing was applied.

No. 17 CGH

If there was any indication of a foreign body and no history of its removal the wound was X-rayed or screened and the foreign body, if any located, and the wound excised. The foreign body was usually loose bone fragments etc. Sulphonamide powder, vaseline gauze and plaster of paris, if necessary, were applied. Dirty wounds were treated with 30 per cent sodium sulphate which promoted rapid healing. Tiolet was done in burn cases under general anaesthesia. One per cent tannic acid with 3 per cent silver nitrate was applied. If sepsis intervened soaks of sodium sulphate or 50-50 saline and eusol were used. Ulcers and septic bites on the legs were frequent and severe. Sodium sulphate soaks followed by sulphonamide powder and eusol for 5-6 days proved satisfactory. Reactions following plasma transfusions were exceptionally high. This hospital found that by 7 February admissions for malaria were high and that the cases were very resistant to treatment. Whether quinine alone was given or quinine and plasmoquin or atebirin the fever was not controlled until after 7 to 10 days of treatment. Tests of the urine showed that the quinine was being absorbed. From the period 8 December 1941 to 26 January 1942, the OC No 6 Malaria Field Laboratory collected the approximate number of cases of malaria as 1,000. After this period the number of cases increased considerably.

Medical Equipment

Most Regimental Medical Officers were able during operations to acquire a motor vehicle from civil sources—generally some form of van—and all spoke very highly of its great value, especially with Field Artillery Regiments. It was used as a travelling RAP and room for at least one lying case could be found in it. It enabled an urgent case to be got quickly to hospital and if necessary ambulance cars could be called up to the unit. Transport of all units must of necessity be kept to a minimum but with certain readjustments it might be possible to include such an extremely useful vehicle without involving an increase in the total number of vehicles authorised. A number of Regimental Medical Officers expressed dissatisfaction with the Regimental Field Equipment (medical). Field medical equipment has been devised with a view to providing a suitable basis for immediate needs in a great variety of conditions and as such is bound to prove unsatisfactory in certain specific circumstances. With the more detailed knowledge available nowadays of climate and countries in which operations are likely to take place it should be possible to provide beforehand for modifications to suit local conditions and the anticipated nature of operations. The contents of panniers could be revised with advantage not only in regard to the material used for containers but also in regard to the contents and the articles supplied.

CHAPTER VI

Burma

PHYSICAL FEATURES

Burma lies to the east of the Bay of Bengal. Its coastline from the mouth of the river Naf in the Akyab district in the west to Maliwun in the extreme south is about 1,200 miles in length. The total area of the country in 1939 was about two hundred and sixty thousand square miles. The northern frontier of the country lay across the eastern Himalayas with their snowy peaks and unexplored valleys, to the east lay China, Thailand, and what was at that time known as French Indo-China, on the south and west it was bounded by the Indian Ocean and on the north-west by Manipur and the then Indian Provinces of Assam and Bengal.

Burma falls into three natural divisions, viz., the Arakan and the Chin Hills, the Irrawaddy and the Sittang basin and the province of Tenasserim together with Shan and Karenni States lying in the basin of the river Salween. These three natural divisions run north and south. The river Irrawaddy rises beyond the confines of Burma in the Himalayas. It was navigable for 900 miles upto Bhamo for large steamers all the year round. Country boats could sail from Bhamo to Myitkyina. In its long course of about 1,300 miles through Burma the river Irrawaddy traverses varying tracts of country. First there is the hilly country at the source of the river Chindwin, its main tributary. It drains much of the northern Shan States, a mass of rugged hills and deep gorges. Next it traverses the dry zone of Burma. This extends from the north of Mandalay to Thayetmyo and consists mostly of open undulating lowland, broken in the south-east by the Pegu Yomas, a considerable range of comparatively low hills running north and south and separating the Irrawaddy and Sittang rivers. In the dry zone, rainfall is lower than in the rest of Burma. In general, this tract is arid. Below the dry zone from just south of Prome is the Irrawaddy delta, a vast and fertile plain, unbroken by hills, and extending to the sea. This delta consists almost entirely of a rich alluvial deposit and is the main rice-growing area of the country. It supports many prosperous towns and villages. Although cut off from it by the Pegu Yomas the valley of the Sittang geographically forms part of the Irrawaddy basin. Like the Irrawaddy the Sittang also flows through the central plain of the country. The third natural division of Burma comprises the Shan Plateau with a southward continuation in the narrow strip of land called Tenasserim. The low-lying land in the Tenasserim area is mainly under rice cultivation. There are also vast areas of dense jungle. Further north the Salween traverses the Shan States and Karenni. It rises in Tibet north of Lhasa and is too swift to be navigable, except to a limited extent near its mouth. Much of its course runs through deep gorges, save where it is crossed by the Burma Road. In its lower reaches it marches along or near the frontier with Thailand and is a formidable natural obstacle.

Burma is encircled on three sides by mountain ranges, all forming part of the eastern Himalayan chain. In the north are the Naga Hills and the Kumon Range. The Naga Hills are continued on the south-west by the Chin Hills which are then prolonged southwards by the Arakan Yomas. These follow the Arakan coast to its south-west extremity at Cape Negrais. East of the Kumon Range are the Kachin, Shan, and Karen Hills extending from the Irrawaddy valley into China far beyond the river Salween and thence south towards Thailand. From these hills a long narrow range, the Dawna, thrusts further south to form the eastern watershed of the Salween and separates Tenasserim from Thailand. Also running north and south through Central Burma and dividing the valleys of the lower Irrawaddy and the Sittang are the Pegu Yomas. Although somewhat detached from the other ranges they are geographically a part of them. All these hills, save for certain areas of open plain and down-land in the Shan States, are forest clad and steep. To the east of the Shan States the frontier with Indo-China is demarcated by the broad Mekong river.

CLIMATE

The climate of Burma is notable for heavy monsoon except in the dry zone around Mandalay in Central Burma. The rainfall depends on north-east and south-west monsoons. The north-east monsoon lasts from November to February or March when the days are bright and the sky clear at night. The south-west monsoon lasts from mid-May till mid-October when the rainfall is heavy. During October there is a gradual transition from wet to dry weather. Tropical cyclones and depressions are fairly frequent in the Bay of Bengal between April and December with the worst storms before and after the south-west monsoon. During the south-west monsoon the rainfall is very heavy, varying from 32·6 inches to 206·8 inches in the year in different places. The heaviest rainfall is along the coast. Falls of over five inches in 24 hours occur on an average about six times a year around Akyab and over three inches in 24 hours about twelve times a year on the Arakan coast. Around Sandoway they are liable to recur as often as twenty times a year. Falls of over 15 inches in 24 hours have been recorded all along the Burma coast excepting the Irrawaddy delta, while the average fall during July is over two inches a day on the Arakan coast. Inland, Mandalay has a fall of three inches in 24 hours at least once in most years but at Bhamo such falls are usually twice. Floods occur along the Irrawaddy and Sittang valleys during the monsoon.

PRINCIPAL DISEASES IN BURMA

Malaria: Malaria was most widely prevalent in the country. Deaths from fevers in 1938 accounted for 38·39 per cent of the total mortality and in 1939, 39·82 per cent (December being the peak month). On the assumption that half the deaths ascribed to fevers were due to malaria, 57,000 was the death roll for 1938 and 60,000 for 1939. The malaria season was supposed to last from April to the beginning of

December in the north-western and north-eastern hilly sections, from October to May in the western coastal sections from Chittagong to Giwa in Sandoway, and from August to October in the plains north of Prome. The deltaic region of the Irrawaddy south of Prome, was considered relatively free from malaria. The Central Bureau had been collecting information on the subject since 1927. As a result of surveys, systematic anti-malaria measures were carried out in Akyab, Kyaukpyu, Lashio and Maymyo. Much of swamp land was reclaimed and stagnant collections of water which could not be drained off were treated with malariol. Paris green was also sprayed at some places. Some anti-malarial operations were carried out at Sandoway, Insein, Syriam, Bhamo and Myitkyina. The cost of thorough anti-malarial measures was prohibitive to the villagers where the disease was most prevalent and neither the Central Government nor rural bodies were able to defray the necessary expense. The distribution of small larviparous fish was widely carried out. The Harcourt Butler Institute constructed a central hatchery for rearing *Gambusia affinis*. During 1938, 26,456 fish were distributed to seventeen districts and sixteen subsidiary hatcheries were started; the following year ten more were instituted. The Government of India had given to Burma 5,000 lbs. surplus quinine sulphate which were made into tablets. These had been distributed free by April 1937. In 1938 over ten million of these tablets were given out. When stocks diminished only the actual sufferers who were too poor to buy them were issued with free tablets. The sale increased steadily from four million in 1937 to over five and a half million in 1939.

OTHER DISEASES

Besides malaria, the major epidemic diseases in Burma were cholera, plague and smallpox. All the three were notifiable both in urban and rural areas. Cinema shows, lantern talks, lectures and pamphlets were employed to educate the public in the nature and prevention of the diseases. Preventive measures were the responsibility of local bodies concerned and the vaccination staff employed by them was generally able to control an outbreak of smallpox. Services of Health Officers in towns were valuable in dealing with the outbreaks of cholera and plague. In rural areas sub-assistant surgeons carried out preventive measures and the Government recovered the pay and allowances of the sub-assistant surgeons, for the time they were employed on epidemic duty, from the local bodies. Failure or delay in reporting epidemic diseases was punishable with imprisonment and fine ranging from Re. 1 to Rs. 50. The number of cases in which failure or delay occurred was probably considerable in rural areas.

Cholera: The five-year mean death rate from cholera ending 1939 was 0.21 per 1,000. The total number of deaths recorded in 1938 was 586 and in 1939, 1,468 of which 216 occurred in towns. The districts of the lower Irrawaddy and Toungoo were most affected. Altogether 2,30,608 inoculations were performed in 1939. In the previous years the disease was usually severe between the months of April and July whereas in 1938, September and in 1939, December were the peak months. One

of the causes of the spread of the disease was the flooding of the tanks and shallow wells and subsequent pollution of water, when the rivers were in spate.

Plague: The five-year mean death rate to the end of 1939 from plague was 0·20. The outbreaks were usually felt in the first three months of the year, the largest number of deaths being recorded in February. By April the disease used to die down and reach vanishing point in May. Only sporadic cases occurred during the ensuing months. There was again a rise in incidence after October. In Mandalay, Magwe, and Sagaing Divisions the disease was widely prevalent. The total death roll for the year 1939 was 3,266 and more than half the deaths occurred in the Mandalay Division. The Burma Municipal Act gave local authorities the right to insist on the construction of rat-proof godowns for grain storage and the rebuilding of those which had become unserviceable as also on the correct administration of the bazaars and bazaar stalls. These provisions were not always carried out effectively and in 1939 the Government of Burma addressed all local authorities urging them to emulate Maymyo in the measures which its Municipality had taken towards plague eradication. In addition to smoking and trapping the rats Cyanogas was used for fumigating burrows. Nearly 7,00,000 rats were recorded as having been killed in one year. On the receipt of reports of infected villages sub-assistant surgeons took remedial measures and rat-destruction gangs were employed. Some villages were voluntarily evacuated, but in other cases evacuation had to be enforced. 1,52,424 inoculations were carried out in 1939 (the previous year there were 2,45,809). The people, however, were slow to take advantage of the facilities offered. The bazaars were the main source of infection.

Small-pox: Local bodies had the power to frame rules for compulsory vaccination. By 1939, twenty-six out of twenty-eight District Councils and sixty-seven out of seventy-seven Municipal and Town Committees had framed such rules. By 1939 a vaccination staff of 597 was employed, consisting of 6 sub-assistant surgeons, 160 public health inspectors who were part-time supervising officers and 437 wholetime workers. This number was considered insufficient. Altogether 15,79,549 persons were vaccinated during 1939. The vaccine depot at Meiktila produced 21,726 grammes (2,105,456 doses) of lymph during 1939. Before issue it was subjected to microscopic, biochemical and animal tests for pathogenic bacteria and Calmette-Guerin's international potency tests on rabbits. The reported success rate was 98·10 per cent and in revaccination cases 31·29 per cent. Out of the twenty cow-calves and fifty buffalo-calves vaccinated, the average yield per cow-calf was 77·30 grammes and per buffalo-calf 403·60 grammes. The Malayan method of animal vaccination was used except that the buffaloes were scrapped on the fourth day instead of the fifth as previously. By this process less lymph was obtained but it was more potent, and kept better. There were 125 fatal cases of small-pox during 1939, a rate of 0·01 per cent, the lowest since 1872, the first year of which figures are available. The disease was liable to occur throughout the year. Largest number of deaths took place in April and the least in October.

Enteric fevers: Enteric fevers were amongst notifiable diseases in all the towns of Burma. Four hundred and fifty-one deaths from this group of fevers were recorded in 1938, and 383 in 1939. No figures are available as to the number of cases which occurred in any year. Apart from admission to hospital the number of cases reported was small. Very high death rates were recorded in Kyaukse, Allammye, Yandoon and Myinmu. All these towns had no protected water supply.

Dysentery and Diarrhoea: The five-year mean death rate from dysentery and diarrhoea was 0.48, and the actual number of deaths recorded in 1939 was 6,531. The largest number of deaths took place in July and the lowest in March. Irrawaddy and Pegu Divisions recorded a very large number of deaths. Wells, tanks and chaungs polluted during the monsoon owing to the rise of sub-soil water level were held to be largely responsible for the disease. Ankylostomiasis was also prevalent.

Respiratory diseases: Respiratory diseases accounted for 12,292 deaths in 1939, the rate for rural areas being 0.28 per cent and for towns 7.29 per cent. Poor housing conditions and overcrowding were considered to be the causes for the high rate in towns. It was thought that inability to differentiate the various diseases by headmen might have accounted for the comparatively low figure for the districts. Of the 1939 total, 10,300 occurred in towns and of these 4,461 were ascribed to pneumonia, 2,520 to pulmonary tuberculosis, 6 to whooping cough and the rest to other respiratory diseases. (Other forms of tuberculosis accounted for 246 deaths in that year.)

Beri-beri: Beri-beri was prevalent in certain areas.

Cerebrospinal meningitis: Thirty-four deaths were reported in 1939 (16 of them in Rangoon) from Cerebrospinal meningitis.

Venereal diseases: Medical and health officers regarded venereal diseases as a serious problem in Burma but the available figures are considered inadequate for drawing any definite conclusions. They were said to be particularly prevalent in the Bhamo and Myitkyina districts. Facilities for treating seamen existed in Rangoon, Bassein, Akyab and Moulmein and special centres for treatment existed in 22 other hospitals. During 1938, 74,726 persons were treated, 33,962 for syphilis, 26,278 for gonococcal infection and the rest for other venereal diseases, while in 1939, 84,208 people were treated for venereal disease.

Leprosy: Leprosy was notifiable only in Maymyo and Monywa municipalities. After a special leprosy officer had been appointed, surveys were carried out in three areas where leprosy was known to be prevalent, and 16.49 per thousand of the population were found to be affected. The number of deaths from the disease was not known, but an estimate of the number suffering from it was 15,000. In 1947 a Central Association to control tuberculosis and leprosy had been formed and Rs. 4,59,681-7-11 collected but much more money was needed. The Director of Public Health furnished the Association with an outline of work to combat leprosy. A Leprosy Advisory Board, which was intended to be permanent, was formed. The disease was most prevalent in a belt across the middle of the country and also in the Irrawaddy delta;

the north and coastal regions being comparatively free. Infections of Lepromatus type formed a higher proportion in the Burmese. From the number of children affected, the disease seemed to be on the increase. Leper asylums existed in Rangoon, Mandalay and Moulmein. There were several leper colonies in the country and by 1939 there were clinics at 35 places, at which over 5,000 cases were treated during the year.

Typhus: Cases of classical typhus were practically unknown in Burma but scrub typhus was endemic. It occurred both in the dense forest country, such as the Chin Hills, and parts of the Shan States and in the scrub jungle in the Central Mandalay—Tazi area.

Eye diseases: Eye complaints such as trachoma and conjunctivitis were common principally in the districts of Burma, north of Mandalay. Arrangements had been made to store eye lotion tablets in 27 treasuries for supply to the persons authorised by the Health Department.

Yaws: In 1937 the Medical Department initiated a campaign for treatment of Yaws. One sub-assistant surgeon, on special duty in the Upper Chindwin up to the end of 1939, treated 10,210 cases. Treatment was also given in other districts, but the work was handicapped through lack of funds.

Goitre: Goitre was prevalent in villages with bad sanitary conditions and in certain hill tracts, particularly in the northern Shan States. In 1939 a survey was carried out in the Chin Hills district. As a result all school children in nine affected districts were given half a grain of potassium iodide in solution twice a month.

CHAPTER VII

Preparation for the War

POLITICAL SITUATION

The Government of Burma Act 1935 came into force in April 1937. It separated Burma from India and conferred on the people some measure of self-government but the defence of the country remained the responsibility of the British Governor. On the outbreak of war with Germany in September 1939 the Burmese regarded the conflict as of little concern to themselves. The bulk of the population was primarily concerned in escaping war and its effects. There was also opposition to British rule. The Burmese press in general was anti-British in tone. A number of Burmese, who later formed the nucleus of the 'Burma Independent Army', gave active assistance to the Japanese who were functioning as doctors, dentists and photographers in Rangoon and in other towns of importance. Their profession enabled them to come into close contact with the people of all classes and thereby collect vital information. Many experienced police officers in Burma suspected that the Japanese had fomented the anti-Indian riots in 1938, and subsequent serious strike in the oilfields.

MILITARY FORCES IN BURMA

The eastern frontier of Burma protected by the rugged jungle-clad mountains, forward of the unbridged Salween river, was considered to be a formidable barrier against invasion. The military forces in Burma (and Andaman Islands) consisted of two battalions of British infantry, three sometimes four battalions of the Burma Rifles, an Indian Mountain battery, a company of Indian sappers and miners, certain units of the Auxiliary Force (India) and the Indian Territorial Force and a few auxiliary and administrative units. In addition to regular, auxiliary and territorial forces there were also nine battalions of the Burma Military Police, a semi-military organisation under the Inspector General of Police, Burma. Before the separation of Burma all these forces, except the Burma Military Police, were part of the Indian army.

After the separation it was intended that all Indian army units would be withdrawn. This was not possible until the Burma army whose formation was then started could take over. The Burma Rifles were transferred to the new army in Burma. The mountain battery and the company of sappers and miners remained on loan from India but on the raising of the first company of Burma sappers and miners the Indian company was withdrawn early in 1940. The two British battalions continued to be in Burma mainly for internal security purposes. The Auxiliary Force and Territorial Force were embodied in the newly created Burma Auxiliary Force and Burma Territorial Force. Six battalions of the Burma Military Police, which were largely Indian in composition, became the Burma Frontier force. This force was placed under an Inspector General and was allotted a lump sum annually for pay, rations,

clothing etc. The remaining three battalions together with the civil police continued to be under the Inspector General of Police.

On the outbreak of war with Germany, Burma began to expand her forces. As Japanese intentions clarified this expansion was speeded up. Yet little danger was suspected on the land side for beyond the frontier lay no militarily powerful neighbour. In 1939, the General Officer Commanding Burma Army after discussing various possibilities said 'I do not regard the land threat seriously. Air attack by Japan from Siamese aerodromes is the big danger'. In October a Defence Conference, held in Singapore to consider the defence of the Far East, substantially agreed with this view, though land attacks into the Southern Shan States through Siam and upon the Tenasserim airfields were not considered probable. When the control of the armed forces had passed to the Governor of Burma the old Burma District Headquarters with its small staff became the Burma Army Headquarters. From a military point of view the change had obvious disadvantages. Much complicated administration formerly carried out by the General Headquarters India, now devolved upon the small Burma Army Headquarters, which had to deal with the civil departments of the Government of Burma to get whatever was required. The task was no easy one owing to the fashion for economy in defence expenditure and the limitations of the supplies for Burma, which could be met only when the urgent demands of the armies in the United Kingdom and in the active theatres of the war had been met primarily.

It was evident that such a small unit in the system of defence could not be efficient and the army in Burma could not stand alone. Successive Commanders-in-Chief in India, supported by the Governor of Burma and his General Officer Commanding had represented the need for reinforcements. The advantages of giving the Commander-in-Chief in India the task of placing Burma in a proper state of defence were also emphasised. It was, however, not until late in 1941 that these recommendations were given substantial effect to, but by then India was no longer in a position to offer much help. Engaged in the vast expansion, begun a year too late, which was to raise Indian forces from some two hundred thousand to nearly two million, she was herself as short as Burma of all modern munitions of war. Indian units were urgently required in the Middle East and elsewhere and could only be made available to Burma at the expense of these theatres. Nevertheless, India initiated action regarding reinforcements for Burma, even before she had been made responsible for the defence of that country. Early in 1941, the 13th Indian Infantry Brigade and later in the year the 16th Indian Infantry Brigade were sent to Burma from India. After the campaign had actually started the 17th Indian Division arrived and bore the brunt of fighting in Burma, faced disaster and retreat with undiminished courage, and in the years to follow thoroughly avenged its losses.

MEDICAL SERVICES

So far as medical services were concerned, before the war, there were four hospitals, a Burma hospital coy and a medical stores depot.

The hospitals included British military hospital with Burma wing in Mingaladon, British military hospital in Maymyo, Burma military hospital in Maymyo and Burma military hospital with British wing in Mandalay. The total strength of medical officers was only 47 (RAMC officers 12, IMS officers in military employ 12, assistant surgeons British Cadre 11 and assistant surgeons Indian Cadre 12). The only nursing sisters, all QAIMNS, available were working in British military hospitals in Mingaladon and Maymyo. The Burma Frontier Force had its own medical arrangements, employing a civil assistant surgeon in each unit and sending the sick to the neighbouring civil hospitals for treatment.

The Deputy Director Medical Services, Army in Burma (Colonel Monteath followed by Colonel A. G. Biggam, OBE, later relieved in April 1941 by Colonel (later) Brigadier E. C. Lang, DSO), was responsible for most of the planning towards expansion of the medical units in Burma. He had a DADH and DADP on his staff. Later a staff captain (medical) was added to the Headquarters Medical Establishments. The task of expanding these units was beset with many difficulties owing to shortages in medical personnel, especially officers and nurses, transport, equipment and buildings.

In the meantime, the Burma Frontier Force had provided one complete battalion, the 8th Burma Rifles and four mobile columns and was soon after placed directly under the Army. But after the incorporation its medical components refused to accept GCOs Commission (equivalent to VCO of the Indian Army), and at that time only doctors with MBBS degree or equivalent were eligible for commissions as officers in the ABRO(M). This caused further complications in the already difficult situation.

The GOCs Conferences usually opened with the phrase 'The limiting factor to the expansion of the Army remains as before—the medical services'. The United Kingdom, India and all the Dominions were actively engaged in expanding their own medical services and had hardly any medical officers to spare for Burma. A recruiting drive in Burma itself met with little success. After prolonged discussions the Prime Minister of Burma gave his consent to the conscription of civil doctors for military service. This decision was, however, not implemented owing to rapid developments in the war situation. The task of the DDMS was of a stupendous nature and in fact he had to expand the medical services with practically nothing available at the time.

The shortage of nursing staff was partly made up by locally enrolled civilian nurses mostly Anglo-Indians, Anglo-Burmese and Keren. An Anglo-Burmese section of the RAMC was formed (on the same lines as the Anglo-Indian section of the RAMC) and sent to BMH Maymyo for training. Burma Hospital Corps was expanded and intensive training was started at Burma Hospital Company Training Centre in Rangoon. The existing pre-war military hospitals were expanded by constructing semi-permanent huts. New Burma Military Hospitals were established in school buildings supplemented by semi-permanent huts in Taunggyi and Toungoo. A small hospital was also opened at Meiktila. The location of these hospitals was determined partly

by the projected distribution of troops, the existence of rail and road facilities and the proximity to the new RAF Stations¹ which were then being constructed. The decision to establish Burma military hospitals rather than field units was made in order to have a liberal scale of equipment in view of the fact that a static role was envisaged for them.

Civil hospitals at Lashio, Keng Tung, Tavoy and Mergui were also expanded to cater for military cases. The civil surgeon was made responsible for this and in each case he functioned as officer commanding military hospital in his own station on his recall to military service. Two Burma field ambulances, No. 1 Field Ambulance in Taunggi (later moved to its operational site east of the Salween river) and No. 2 Field Ambulance in Moulmein (employed partly in training and partly to staff a small local hospital), and one Burma field hygiene section were raised. One anti-malaria unit was planned but was not fully mobilised. A malariologist with the rank of Major in the ABRO(M) was appointed who carried out malaria control work with locally engaged labour, pending the raising of the anti-malaria unit. To help in evacuation from the forward areas an attempt was made to raise pony companies with Chinese civilian drivers but it was unsuccessful. Two general hospitals, two ambulance trains, two MACs, one convalescent depot and a hospital ship were also planned but could not be mobilised owing to lack of personnel.

The Medical Stores Depot at Rangoon was responsible for requirements not only of the military but also civil hospitals in Burma. Subsidiary depots were opened in Insein, twelve miles north of Rangoon, and in Mandalay to minimise the loss from bombing. These depots were placed under retired assistant surgeons (British cadre). In view of the increase in work involved in provisioning for all the new military requirements as well as civil hospitals a medical officer was detailed solely for medical stores in addition to OC MSD Rangoon. The DDMS could on his own responsibility order upto Rs. 5 lakhs worth of any one article on any day. But there was considerable delay in obtaining medical supplies, other than those obtained locally which were few. As time passed it became evident that the three existing MSDs were insufficient to cope with the work. It was, therefore, decided to build a new and larger store in Rangoon. Construction, however, could not be started as Rangoon fell before the preliminary work was completed.

57 Indian Field Ambulance, 4 Indian Casualty Clearing Station, 60 Indian General Hospital (two sections) and a Field Hygiene Section had arrived early in 1941 with the 13th Indian Infantry Brigade. It was the first properly equipped and trained force that Burma had so far seen. The brigade with its associated medical units was located in Fort Dufferin in Mandalay and carried out training in the area. 60 IGH was opened in a school just outside the Fort. Later in 1941, the 16th Indian Infantry Brigade with the 37 Indian Field Ambulance and 8 Indian CCS was also sent from India.

¹ The RAF stations were based purely to meet tactical requirements. It was unfortunate that most of the sites selected happened to be in highly malarious areas. Due to the impossibility of obtaining wire gauge in adequate quantity and of requisite quality and the open nature of the building material, mosquito proofing of the buildings was obviously not easy.

In July 1941, the 1st Burma Brigade, the 2nd Burma Brigade and the 13th Indian Infantry Brigade were formed into the 1st Burma Division. The divisional headquarters was located at Taungoo midway between Tenasserim and Shan States areas. Colonel V. N. Agate IMS was sent from India to assume the appointment of ADMS, 1st Burma Division.

Two Brigades (13th Indian Infantry Brigade and a brigade composed of 2 Koyli and two Burma Rifles Battalions) were moved into the Southern Shan States. The main defence line was to be the line of the Salween river which is a formidable obstacle, being about 200 yards wide with a 10 knot current rising during the monsoon to as much as 40 feet in a day and running along steep shelving banks of soft mud. The only supply line for this force was the west-to-east road from Meiktila in Central Burma to Loilem. Burma military hospital Taunggyi was to act as base hospital for this force. 4 CCS was moved up to Loilem and the two field ambulances were employed in the forward areas between the Salween river and Keng Tung. 60 IGH remained in Mandalay. The L of C from the forward area to Taunggyi was about 200 miles long. From Taunggyi to railhead at Shwenyaung was 12 miles. From the railhead traffic moved to the railway junction at Thazi, on the main line from Rangoon to Mandalay, Maymyo and Lashio. The road was narrow and tortuous. Forward of the Salween one way traffic had to be imposed as far as Keng Tung. The route crossed one small river bridge about 20 miles west of the Salween. The Salween itself had to be crossed by means of a wire rope ferry, capable of taking one vehicle at a time. In order to be able to hold up personnel arriving at the river after dark it was necessary to set up staging posts on both the banks of the river at Takaw East and Takaw West. Arrangements were made to receive patients for the night on their way back to Taunggyi. It was also necessary to establish an improvised staging post between Takaw and the forward area. A small hospital unit had been established at Keng Tung under the civil surgeon to hospitalise sick patients in this area. As no MAC vehicles were available field ambulance cars had to be employed to bring back cases from the forward area when hospital treatment was required. It will be obvious how slender was the chain of evacuation and how readily it could be broken.

The third brigade (three battalions of Burma Rifles) of the 1st Burma Division was stationed in Tenasserim with headquarters at Moulmein, and the forward battalion in Tavoy and Mergui to guard the 250 miles of frontier with Siam. There was no road communication between Rangoon and Moulmein. The traffic between them was maintained either by sea or by train, crossing the Sittang river, thence to Martaban and from Martaban by river to Moulmein. Communication from Moulmein to Tavoy was by train to Ye where a small river was crossed by a country boat and thence the journey was covered by a fairly good road for about 100 miles to Tavoy. From Tavoy to Mergui there was a road passable in dry weather but often interrupted by flooded *chaungs* during the monsoon. If the road was interrupted by flood the journey from Tavoy to Mergui was made by launch down the Tavoy river for 30 miles to the sea. The task of evacuating casualties along

such a route was no easy one. 2 Field Ambulance had opened a small hospital in Moulmein. Any cases which required prolonged or specialised treatment were evacuated by train to Rangoon and thence by motor ambulance to Mingaladon. At Tavoy and Mergui the respective civil surgeons had opened military wings in their civil hospitals.

By the beginning of November 1941, Burma had completed the raising of her quota of field medical units. In addition, all her peace hospitals had been expanded making up eleven hospitals with a total of 3,569 beds. But most of these hospitals and many of the field medical units, though complete in equipment, were very short of personnel, and especially of qualified doctors. A statement of deficiencies sent to the War Office, London at this time listed 116 medical officers and 174 assistant and sub-assistant surgeons as the requirement to make existing units up to their sanctioned establishments.

There were four field ambulance units, three field hygiene sections, three casualty clearing stations, two staging sections, two ambulance trains, two and a half motor ambulance transport, one depot medical stores and three headquarters and twelve sections of general hospital and one ambulance transport ship. On 1 December 1941 the disposition of units was as follows:—

Maymyo	BMH Burma MH Distt. Lab.	
Mandalay	Burma MH with British Wing 3 Ind. Fd. Amb. Troops Class I (moved to Moulmein) G & Q Sec. Gen. Hosp. Fd. Hyg. Sub. Sec. 37 Ind. Fd. Amb.	16th Indian Infantry Brigade
Meiktila	Burma MH Burma MH & British Wing=Taunggyi Small Lab. 1 Coy Fd. Amb. Det. 8 MAS 2 Fd. Hyg. Sec. 57 Fd. Amb. 1 Ind. Fd. Amb. Troops Class I Det. Burma Fd. Hyg. Sec. 4 CCS Hospital unit under Civil Surgeon=Keng Tung	13th Indian Infantry Brigade East Taunggyi Loilem
Toungoo	1 Burma General Hospital Small Lab. HQ and 1 Sec. 1 Coy Fd. Amb. 1 Coy Fd. Amb. 2 Burma CCS (Less 1 Sec) 2 Fd. Amb. (Less 2 Coys)	=Laikkha =Loimwe =Namawngun =Panghkam

Rangoon	Burma Hospital	
	Coy HQ and Depot	
	Med. Store Depot	
	Detention Hospital	
	1 Burma Fd. Amb.	= Tenasserim
	1 Burma CCS	} Moulmein
	1 Burma Fd. Hyg. Sec.	
	Military Wing in Civil Hospital	= Tavoy
Mingaladon	BMH & Burma Wing	
	Bde Lab.	
	Burma Military Hospital	= Tavoy
	Burma Military Hospital	= Mergui
	Military Wing in Civil Hospital	= Mergui.

The provision of hospital beds caused considerable anxiety. Medical planning was extremely difficult because the situation changed so rapidly. One day an Australian division was coming to Burma and the provision of British beds for them was a matter of the utmost concern. A few days later the move was cancelled. The strength of the force in Burma, after the arrival of "Force Pugnacious", was estimated to be 45,000 including the Royal Air Force. For this force there were 3,569 beds available, representing 7.4 per cent bed cover. Another 1,250 beds were expected to be ready within two months as hospital construction was completed, but by that time it was estimated that the strength of the force would increase to 60,000 and the hospital cover would remain the same as before (7.5 per cent). But Burma wanted 10 per cent hospital cover and so additional hospitals were demanded from India. 60 IGH had already come. In addition, India promised two more hospitals, 58 and 59 IGHs, which were to move in January. In addition to these units Burma had asked India for, and been promised, one casualty clearing station, three convalescent depots and other ancillary units.

But to the planner of those days the situation appeared far less tidy than it does in retrospect. For one thing the strength of the force was quite uncertain. Just before the Christmas, the War Office had intimated that the target for Burma was four divisions and fifteen squadrons of the Royal Air Force, a force of one hundred and seventy thousand men, which would require another ten thousand beds in addition to every hospital present or promised. The experience with the hospitals already established showed just how difficult this would be to achieve. On the other hand, far from getting another ten thousand beds it was beginning to look as if the three hospitals coming from India would not arrive in time. A small, virtually ineffective, part of 59 IGH was all that landed before the port of Rangoon was lost.

The problem of evacuation also caused considerable anxiety. While Rangoon was held and hospital ships came into the port there was no difficulty, other than the loss of ships by bombing while in the harbour. How long Rangoon might be used as a port was not certain. Bassein port was not suitable for the evacuation of casualties. The only other route left was by road via Kalewa-Imphal to Dimapur. This

route, however, did not exist. India was planning the line of communication installations on the Dimapur-Kalewa sector. Burma thus had two main problems of evacuation to consider. In case Rangoon was available as a port no hospital ships would be allowed to remain in the harbour a moment longer than necessary, lest they should be bombed while in the port. This required arrangements to collect and hold about 450 casualties (which might be accommodated in a hospital ship) for embarkation as soon as the ship berthed. On the other hand if the Rangoon port was lost, arrangements had to be made to hold casualties until the route by road was established. The provision of adequate transport facilities by road and inland water transport, therefore, required immediate attention.

This was the position in January when a new DDMS arrived in Burma. Brigadier E. G. Lang, DSO, the DDMS, had struggled with the manifold difficulties of medical administration for six months, severely handicapped by an inadequate staff, equipment and transport, but his health broke down. Brigadier T. O. Thompson was selected to succeed him. He was flown from Iraq and arrived towards the end of January 1942. One of his first tasks was to obtain an adequate staff. When he arrived the Medical Branch consisted of three officers and six clerks. The new establishment authorising six officers besides the DDMS and a reasonable number of clerks was sanctioned but the difficulty was to implement it. There were few regular officers in Burma and none was staff trained. To get a staff captain it was necessary to bring down a Major commanding a field ambulance. Good clerks were secured but were taken away by other branches, also desperately trying to expand. The DDMS insisted on having a good officer supervisor, and thereafter a reasonable clerical staff was built up.

Next the peace hospitals were organised as Burma general hospitals. The scheme was put up for sanction to the Defence Department and agreed to in principle, but it was held up for one reason or another until finally the DDMS took the matter into his own hands and issued a letter changing their names and status. The final sanction of the Defence Department was not received until considerably later.

There was a considerable shortage of motor ambulance cars, and many of those with units had developed mechanical defects, breaking half-shafts which could not be replaced. Already during the early stages of the campaign the two ambulance trains had proved very valuable and the DDMS decided to have a third fitted up. These trains carried a hundred lying casualties, or twice that number sitting. They had cooking cars and quarters for their personnel and were stocked with fourteen days rations for a full train and plenty of medical comforts. Thus they were independent of regular supplies which was of great importance owing to the frequent delays and hold-ups on journeys. They had been converted by the Burma Railways from ordinary first and second class coaches, and being metre gauge stock, they had no corridors, which was a disadvantage as the train had to be stopped for meals there being no passage between the coaches. Loading of stretchers was also difficult as they had to be put in through the windows.

The main difficulty in the utilisation of these trains lay in the lack of adequate communications which as the campaign advanced became progressively difficult. When an ambulance train was sent for it was impossible to tell when it would come. This led to the most inconsequential running and to numerous incidents later in the campaign. Sometimes ambulance trains turned up most providently, sometimes they came and were sent away again by some interfering non-medical officer as happened at Pegu not long after, when 140 cases were waiting for evacuation in 23 Field Ambulance.

Just before the final evacuation of Rangoon a fourth train was made up at Prome and a staff collected for it, but this train was never used and the staff was put on board an improvised hospital ship, the *Waipo*, which did valuable service between Prome and Mandalay.

In the Irrawaddy valley above Prome there were no railways as all traffic was carried by river steamers on Burma's great natural waterway. Hospital river steamers were, therefore, obtained. These were passenger steamers which the Irrawaddy Flotilla Company was glad to offer. They had two or three tiers of open decks which were very suitable for conversion. The *Mysore* a very fine big vessel was staffed by 4 CCS, and four smaller steamers had been converted and taken over by the end of March. Later in the campaign two additional ships the *Kalaw*, staffed by 4 CCS, and the *Siam* and several small ones were used as hospital ships.

All these trains and ships were clearly marked with the Red Cross. This afforded real protection as the Japanese Air Force generally respected the Red Cross. Many times their planes flew over moving ambulance trains in broad daylight without attacking them.

CHAPTER VIII

The Disaster at the Sittang

JAPANESE THRUST IN BURMA

The campaign opened quietly. On the night of 7/8 December 1941, the Japanese invaded Thailand and took possession of its airfields and communications. Tavoy was bombed on 11 December and Victoria Point (the southern extremity of Burma) on the following day. The Japanese launched a land attack on Victoria Point which being indefensible at the time was evacuated on 13 December by sea.

Rangoon was bombed on 23 and 25 December. The air attacks did little military damage, but the first raid caused very heavy civilian casualties resulting in the immediate flight of labour and the paralysis of the port. Thenceforward, until its final evacuation, the city functioned haphazardly. The handful of American Volunteer Group (AVG) and Royal Air Force fighters had taken a heavy toll of the raiders. Shattered Japanese aircraft littered the paddy fields and jungles.

On 27 December, Lt.-Gen. T. J. Hutton, CBMC, assumed command of the army in Burma. Meanwhile, it had become evident that the Japanese were preparing to invade Tenasserim. All available troops were concentrated to meet the attack.

Towards the end of December, the first troops of the Chinese Sixth Army entered the Shan States and took over the Mekong river sector. Further Chinese units followed in January 1942. Arrangements were made to release the Indian, British and Burmese forces for employment in south Burma. Subsequently the entire Chinese Fifth and Sixth Armies were detailed to protect the Shan States, Karenni and the upper Sittang valley. The enormous distances, lack of transport and the limited capacity of the Burma Road (the only road line of communication with China) made their movements a difficult and prolonged undertaking.

In southern Burma, in early January 1942, the 17th Indian Division held Mergui, Tavoy, Moulmein and Kawkaik. The Burma Frontier Force columns patrolled the Thai border. At Mergui, Tavoy and Moulmein were important airfields on the route to Malaya and Australia. It was difficult to defend the Tavoy-Mergui area for its land communications with the rest of Burma were poor.

The following medical units were available at the time:

Field Ambulances

1 Burma Fd Amb.	Half way between Kawkaik and Thai border
2 Burma Fd Amb.	
57 Indian Fd Amb. }	Martaban/Kyaikto
37 Indian Fd Amb. }	Thaton/Hninpale

39 Indian Fd Amb.
23 Indian Fd Amb.

Thaton/Kyaikto/Duytzeik
Thaton/Kyaikto

Field Hygiene Sections

1 Burma Fd Hyg Sec. 2 Burma Fd Hyg Sec.
B Dett. (HQ and 1 Sub Sec.) Fd Hyg Sec.
One Sub Sec Fd Hyg Sec. Kyaikto Feb.

Motor Ambulance Section

22 MAS
Dett 1 Burma MAS

Staging Sections

1 Burma Staging Section
2 Burma Staging Section

Casualty Clearing Stations

1 Burma CCS Moulmein/Kyaikto Feb.
2 Burma CCS }
4 Indian CCS } Loleim

Ambulance Train

1 Burma Ambulance Train 2 Burma Ambulance Train

Ambulance Transport

Heinrich Jessen

Depot Medical Stores

MSD Rangoon	} Reserve only
Branch MSD Gyogon Rangoon Area	
Branch MSD Mandalay Area	
13 Indian Depot MS	

General Hospitals

1 Burma GH (HQ and 4 Secs)	Toungoo
Burma MH with British Wing	Mandalay
60 IGH (HQ and 2 Secs)	Mandalay
G and Q Sec. IGH	Mandalay
41 IGH (HQ and 10 Secs)	Maymyo
BMH	Maymyo
Burma MH	Maymyo
Burma MH	Meiktila
Burma MH with British Wing	Taunggyi
BMH with Burma wing	Mingaladon
Combined DH	Rangoon
Burma MMH with British Wing	Moulmein
Garrison Hospital	Thayetmyo
RAF Hospital	Lashio
RAF Hospital	Numsang

Laboratories

District Lab. Maymyo	Bde Lab. Mingaladon
Small Lab. Taunggyi	Small Lab. Toungoo

X-Ray Unit

Maymyo

The Japanese crossed the frontier by a little used track east of Myitta and on 15 January began their advance on Tavoy, which fell on 19 January. The garrison of Mergui was thus isolated. Immediate steps were taken to withdraw the garrison by sea after carrying out demolitions.

The principal road through the Dawna mountains crossed the frontier at the village of Myawadi. This road was defended by two battalions of the 16th Indian Infantry Brigade which had moved forward to reinforce the 4th Battalion of the Burma Rifles. The two battalions occupied a line concealed in the woods only a few hundred yards from a stream that marked the Thai boundary. Here before dawn on 20 January the Japanese 55th Division advanced on a broad front. The situation became confused. Two forward companies were isolated. South of the road a Japanese column with transport elephants made good progress along the jungle paths. The Japanese aircraft were active. The Indian troops fell back towards Kawkareik. The brigade commander had been ordered not to allow his brigade to be surrounded. Accordingly, on the night of 21/22 January he withdrew from Kawkareik. At the crucial moment the primitive vehicle ferry across the Maugtharaw river became blocked by a truck which slipped into the stream. This effectively denied the use of the only motorable road and necessitated the abandonment and destruction of all vehicles and large quantities of equipment and stores. The brigade then crossed the Gyaing river and was later carried by steamers to Martaban. Some days afterwards it was rejoined by the two forward companies which had fought their way back.

OC 1 Burma Field Ambulance was appointed senior medical officer for the Tenasserim area. First aid parties with ambulance ponies to carry their light kit and for the evacuation of casualties were stationed at the forward posts. Shortly after the New Year 1942 the field ambulance had moved forward to Kawkareik on the border of Thailand. One of the field ambulance companies remained at a house half way between Kawkareik and Thai border. Malaria was rife. Out of one company of troops 113 strong, 80 cases of fresh malaria occurred in one month. A large bungalow in Kawkareik was fitted up with wooden beds constructed by local Chinese carpenters and served as a field hospital. The patients could thus be held in Kawkareik. Only seriously ill cases were evacuated by river steamers to Moulmein. Had there been no such holding unit all the sick would have to be evacuated to Moulmein and the force would have been considerably depleted.

Rumours of activity on the other side of the border were being received daily. Except for what information the officer commanding field ambulance got from the political officer no news whatsoever was received by him from the brigade headquarters. On his own initiative he evacuated all the sick except those well enough to be returned to their units and made preparations to receive battle casualties. First aid parties with ambulance ponies and surgical haversacks were posted right up to the forward line. A medical officer was sent to the brigade headquarters to act as liaison officer. Forty-eight hours after the Japanese

MYAWADI-KAWKAREIK AREA
MEDICAL COVER FOR OPERATIONS OF THE
16TH IND INF BDE 20-25 JAN 1942

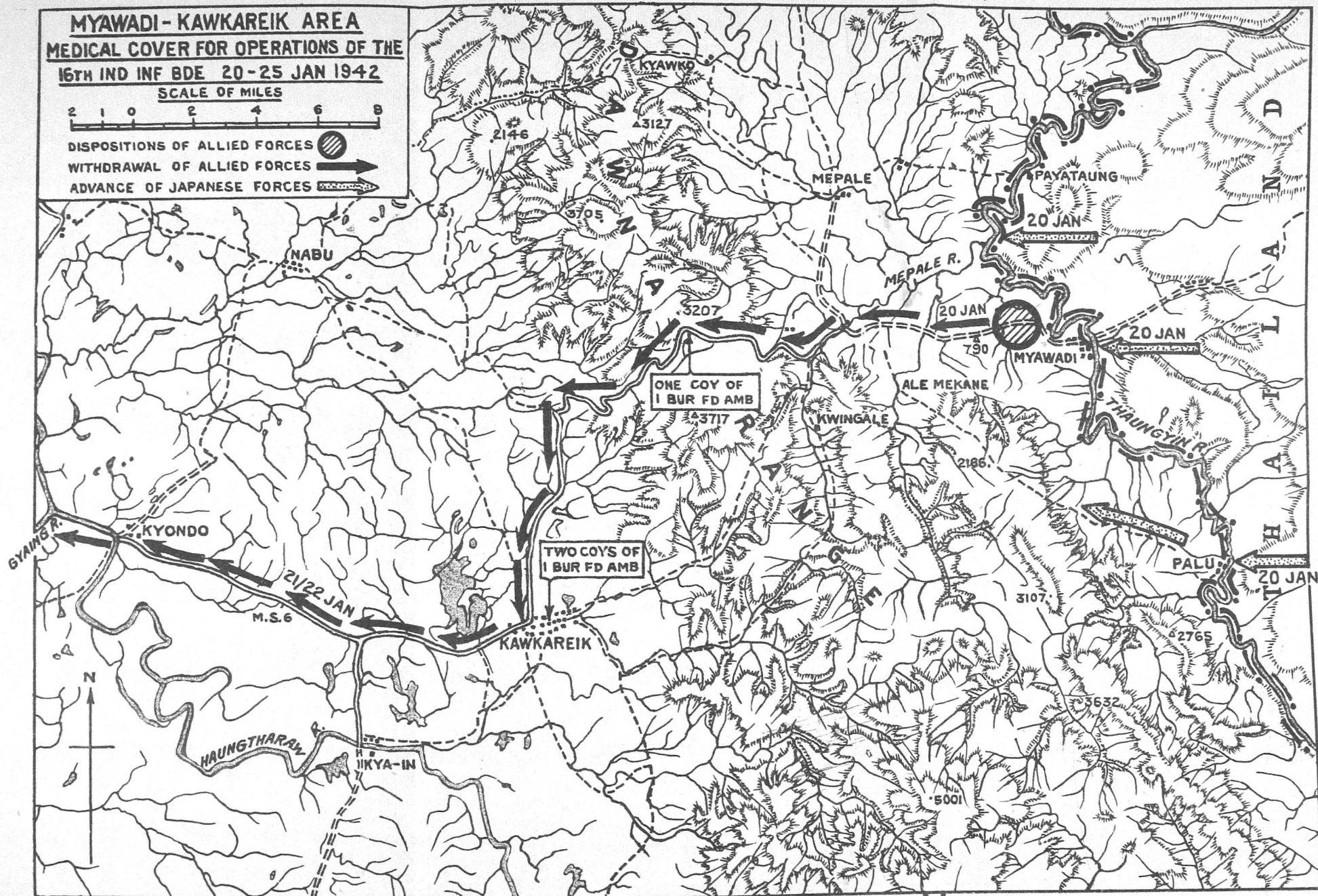
SCALE OF MILES



DISPOSITIONS OF ALLIED FORCES

WITHDRAWAL OF ALLIED FORCES

ADVANCE OF JAPANESE FORCES



launched their attack, forward troops were forced to withdraw. The medical first aid parties were all, except a syce, captured. The field ambulance moved back, under cover of darkness to milestone 6 on the road running from Kawkareik to the river. The road to Moulmein was reported to be cut off by the Japanese. The line selected originally for evacuation was abandoned. After a hazardous journey through the jungle and river the field ambulance reached Moulmein. The OC of the unit was nearly drowned while crossing the river.

JAPANESE ADVANCE TO MOULMEIN

The next Japanese objective was Moulmein, a port on the east bank of the Salween just below its confluence with the Gyaing and Ataran rivers. Long and narrow, the town is pinned to the river by the ridge. This pagoda-crowned height dominates Moulmein. The defence was entrusted to a brigade group made up of a mountain battery, light anti-aircraft battery, three battalions (less two companies) of Burma Rifles, and a battalion of the 12th Frontier Force Regiment. The perimeter, a long parallelogram, included the water front on the west and north, ran east of the ridge, and from the southern end of the ridge went back to the Salween. The airfield, surrounded by jungle and rubber plantations, lay outside the perimeter south-east of the town. It was held by a Burma Frontier Force detachment.

Communication with Martaban, some two and a half miles upstream on the west bank of the treacherous river, was difficult. The steamers were manned by civilian crews. These factors added to the problems of defence.

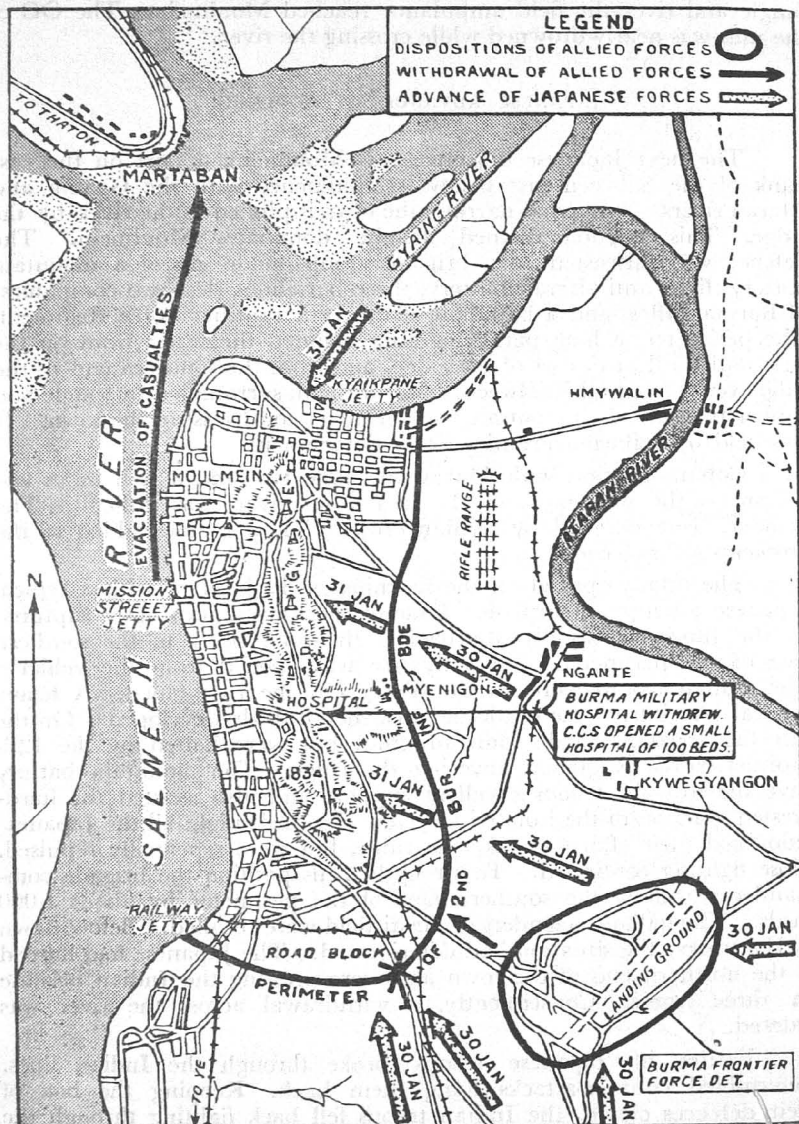
The attack opened on the morning of 30 January with a typical Japanese attempt at surprise. Four of the lorries, previously captured by the Japanese, rapidly approached the road block in the southern face of the perimeter. Suddenly fire was opened from the vehicles. The Indian troops were on the alert, and the ruse failed. A heavy general attack from the south and east then quickly developed. On the east the Japanese made some progress, but were halted by the 12th Frontier Force Regiment covering the ridge. The mountain battery gave the forward troops excellent support and also assisted the hard-pressed garrison of the isolated airfield. Towards nightfall the Japanese redoubled their efforts to take the ridge, but were repeatedly repulsed. Close fighting continued. To strengthen his position the brigade commander withdrew the southern face of the perimeter by about 1,000 yards. The gallant defenders of the airfield were recalled. Before dawn of 31 January the situation had deteriorated. The Japanese had landed at the northern end of the town and were pressing the Indian brigade on three fronts. Consequently, a withdrawal across the river was ordered.

Parties of Japanese troops broke through the Indian lines. Determined counter-attacks flung them back. Keeping the box of their defences closed, the Indian troops fell back fighting through the streets to the jetties. Under fire the greater part of them embarked.

MOULMEIN TOWN AND ENVIRONS **MEDICAL COVER FOR OPERATIONS OF THE 2ND BUR INF BDE**

30-31 JAN 1942

SCALE OF MILES



The river steamers were shelled and machine-gunned as they crossed the Salween but, luckily, hostile Japanese aircraft confined their attention to Martaban.

Moulmein had been heavily bombed on several occasions between 14 and 24 January. Morale was poor amongst Burma Hospital Corps personnel. All Burmese clerks and storekeepers had deserted. The officer commanding the Burma military hospital, however, succeeded in getting away all his stores and equipment and all his nursing staff. The hospital reopened four hundred beds in the Government high school and the American Baptist Mission building in Pegu and almost immediately started receiving casualties from Martaban, Paan, Thaton and Bilin areas through Nos 23, 37 and 39 Indian Field Ambulances. The casualties were evacuated by ambulance train from Pegu to Toungoo and Mandalay.

As the Burma military hospital withdrew, the casualty clearing station opened a small hospital of 100 beds on the ridge in Moulmein. Few facilities were available for treating serious cases. Surgical cases requiring immediate operations were sent to the civil hospital and the remaining serious cases were eventually evacuated to Rangoon. This hospital was nearly always full. The venereal disease rate amongst troops was high. A 50 bedded ward was, therefore, opened for such cases.

On the afternoon of 31 January, Moulmein was surrounded by the Japanese on three sides. Communications were still open across the river to Martaban to which withdrawal was directed. It was facilitated by the field ambulance having given a demonstration some months previously in Moulmein in the working of the unit at war. The evacuation of casualties was done during that demonstration from Mission Street Jetty. This proved of great help when Moulmein was all in flames and street fighting was in progress for the medical personnel knew exactly what to do without receiving any individual instructions. Casualties and personnel were successfully evacuated to Martaban in boats, sampans and rafts. The field ambulance, however, by that time had lost its entire equipment. The unit very badly shaken and reduced in strength to some sixty other ranks, was withdrawn to Rangoon.

In south Burma the Allied troops were now on the line of the Salween, a strong position if adequately held. But the 17th Indian Division was insufficient for this purpose. It could not afford to yield ground. Time had to be gained for the arrival in Rangoon of reinforcements. The protection of the port required the maintenance of the forward warning system to ensure the safety of the small air force based on Mingaladon and its satellite airfields around Rangoon.

The lower reaches of the Salween and the coastal belt were exposed to Japanese infiltration. Here they could gain access to the plain between the mountains of Karenni and the sea. This plain was mainly paddy land cut by many tidal creeks. Inland, towards Karenni, the terrain became rugged, much of it being covered by dense jungle. Across the plain ran the Rangoon-Martaban Railway. In 1942 a motor road joined Martaban and Kyaikto, but from Kyaikto to the Sittang

railway bridge there was only an unsurfaced track. The bridge itself was planked over to carry motor transport. This road and railway formed the line of communication, the Sittang bridge being the vital link with Rangoon and Central Burma.

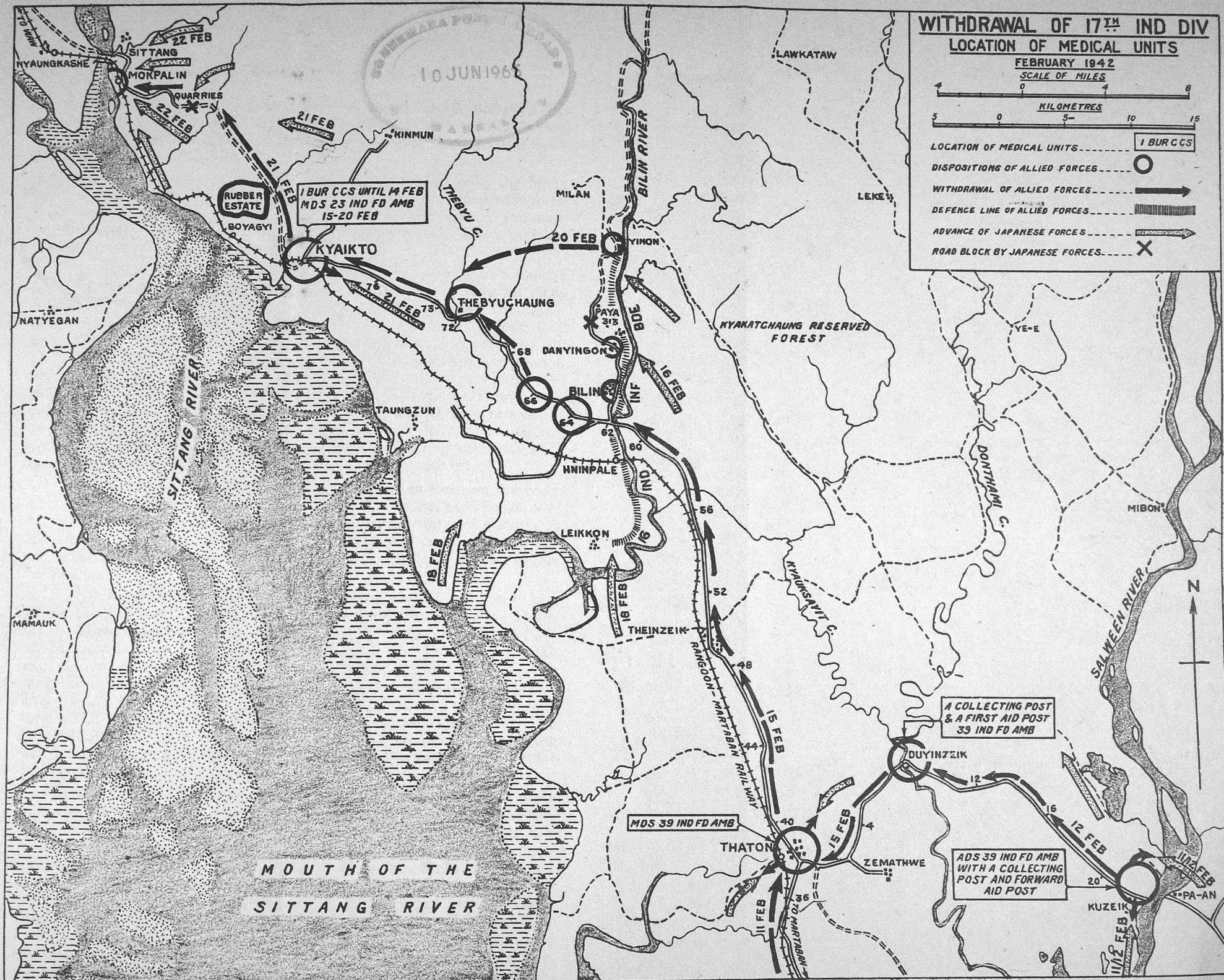
The 17th Indian Division held Martaban and Kuzeik, the latter being opposite Paan, an important ferrying point. Patrols watched the river and coastal belt but could not prevent infiltration. Japanese bombers were active over Kuzeik and Martaban and the latter position was frequently shelled from Moulmein.

39 Indian Field Ambulance had established the MDS in a vacant school in Thaton. One of its companies was sent up to form an ADS behind the Baluch Battalion with a collecting post very near the battalion. A section of another company was sent to form a collecting first aid post near the 5/17 Dogras. Casualties were evacuated to the CCS in Kyaikto. The ADMS of the 17th Indian Division had placed his unit too far forward. The two ambulance trains were allowed to go right up to the MDS 39 Indian Field Ambulance at Thaton and even to Martaban to collect casualties. This was a dangerous procedure and was soon stopped. Forward placing of medical units and using the ambulance trains like ambulance cars exposed them to the chance of being cut off from the rear by destruction of a single culvert.

On 10 February, the Japanese made landings in force on the coast west of Martaban and established a road block between Thaton and Martaban. A company of the 7th Gurkha Rifles routed a column of the Japanese, but the Martaban positions had been by-passed and the garrison had to march across the country on the right to rejoin its brigade at Thaton.

7/10 Baluchis held Kuzeik. Crossing the river both above and below the battalion positions the Japanese launched a general attack on the Kuzeik position on the night of 11/12 February. Throughout the hours of darkness bitter fighting continued. The Japanese strength was estimated at a regiment. The Baluchis acquitted themselves magnificently until sheer weight of numbers overwhelmed them shortly after daybreak. Some seventy officers and men escaped death or capture. The medical officer of the battalion was taken prisoner. The forward aid post had a very bad time along with the battalion. Some were killed, others were taken prisoners and a few joined the unit later at Pegu.

There were now signs that the Japanese were moving along jungle tracks north-east of the main road. Thaton was heavily bombed and the whole bazaar was ablaze. Helped by strong breeze the fire spread rapidly. It was with great effort that the fire was stopped from spreading to the field ambulance. OC 39 Indian Field Ambulance records that the bazaar was "a terrible and nightmarish sight, smouldering fires, burnt out and charred corpses in grotesque and gruesome postures and awful and deathly stillness everywhere". The field ambulance withdrew leaving an ADS at Thaton. Japanese attack continued. The ADS also was withdrawn to Mokpalin. After this the unit did not function in an organised way for sometime. The 40th



Indian Infantry Brigade fell back from Thaton, and the 17th Indian Division took up a position behind the river Bilin. The 16th Indian Infantry Brigade held a 7 mile front along the river from Leikkon in the south through Bilin and Danyingon to Yinon in the north. Behind the main position the 48th Gurkha Brigade was in divisional reserve astride the main road near Thebyu Chaung. The 46th Indian Infantry Brigade held Kyaikto. The river was fordable in many places, and except for the coastal strip the country was hilly and covered with large patches of jungle and rubber plantations. With the limited number of troops available the line was not easy to defend. In the morning of 16 February, the Japanese, who had moved fast, were in contact with the King's Own Yorkshire Light Infantry (KOYLI) in Danyingon. After some heavy fighting in which the reserves were thrown into battle a defensive line was established west of the village.

On 18 February, the situation further deteriorated. Carriers proceeding to Yinon ran into a block half a mile south of Paya and determined attacks failed to clear the road. Behind the southern flank the Japanese landed west of the estuary, and along the whole front the British/Indian troops were closely engaged.

No 1 Burma CCS had functioned in Kyaikto until 14 February when it was relieved by 23 Indian Field Ambulance and went back to Pegu where it reopened for a few days. The MDS of 23 Indian Field Ambulance functioned at Kyaikto from 15 to 20 February. During this phase considerable difficulty was experienced in collecting casualties from the unit RAPs which were often out of contact with the ADSs owing to the confused fighting. On roads car posts were sited well back lest they be cut off by infiltrating Japanese and cars were sent forward only when required.

The Japanese plan was to pin the opposing forces to the Bilin line with their 55th Division. Meanwhile, their newly-arrived 33rd Division, moving through the gap between Point 313 and Yinon, struck for the vital Sittang bridge. With both flanks seriously threatened, and with no reserve left, it was decided to withdraw the 17th Indian Division. Behind it lay the far stronger line of the Sittang, where open paddy lands provided a good defensible position. Reinforcements, including tanks, were expected.

On the night of 19 February, orders were issued for a general withdrawal before first light on the following morning. Fighting continued all night, but contact was successfully broken, although the 9th Jats who were surrounded by the Japanese were unable to get clear until mid-day. The two brigades fell back on Kyaikto. From Yinon the KOYLI company marched across country on receiving an order dropped by aircraft.

Before dawn on 21 February, a sudden attack was made on Kyaikto, where divisional headquarters still remained. The attack was easily beaten off but it indicated that the Japanese were pressing forward. Their 33rd Division, unhampered by transport, was then advancing by jungle tracks well north of Kyaikto.

Uneven and already several inches deep in dust, the fifteen mile long track between Kyaikto and the Sittang was a bottleneck. Cut brushwood, recently cleared from the road track and flung back to the fringes of the jungle, made a thick hedge on each side. Along this vulnerable route the 17th Indian Division began to move on 21 February. 39 Indian Field Ambulance opened a MDS in a deserted Phongyi Kyaung on a small elevation in Mokpalin on the east bank of the Sittang river.

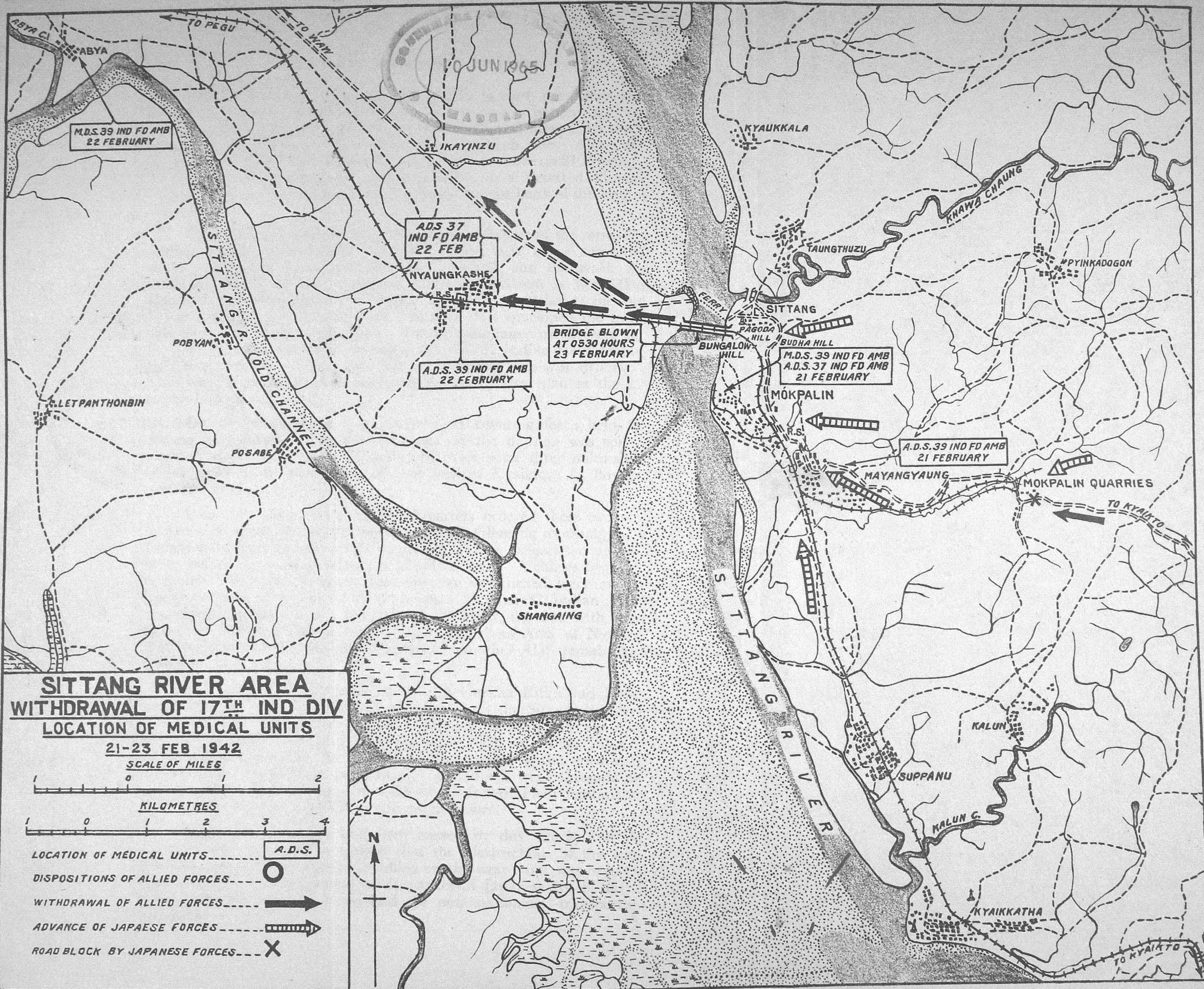
That afternoon and evening, troops and transport of the retreating Indian Division were heavily bombed. There were many casualties, mules stampeded, motor vehicles were wrecked, and the track was cratered. Many of the casualties arrived moribund at the MDS. Considerable disorganisation resulted. To add to the trials of the men it was a day of intense heat, dense clouds of dust enveloped the track, and there was shortage of water. Several ambulance car drivers and car ignition keys were found missing. The OC 37 Indian Field Ambulance took over one of these cars full of wounded and was driving it back when it was machine-gunned from the air. Every man in the car except himself was killed.

On the same night (21 February), a covering force held the Sittang bridgehead, whilst the remainder of the division was spread along the road between the Mokpalin quarries, some three miles short of bridge, and the Boyagyi estate just west of Kyaikto. At Boyagyi were two brigades.

Late that night, divisional headquarters ordered these two rear brigades to march as early as possible on the following morning, for a Japanese outflanking move was suspected. These brigades could not move before the mass of transport ahead of them. Vehicles began to cross the bridge but progress was slow; an overturned lorry on the bridge stopped all traffic for three hours. Most of 37 Indian Field Ambulance got back across the river in the night, together with some men of 39 Indian Field Ambulance and opened an ADS at Nyaungkashe village about a mile from the river. Another ADS remained at Mokpalin.

The Divisional Headquarters, the 4th Gurkha Rifles and Headquarters of the 48th Gurkha Brigade were across the Sittang by dawn (22 February). 39 Indian Field Ambulance had opened an ADS near Nyaungkashe railway station and the MDS at Abya. Shortly afterwards the Japanese, breaking out of the jungle to the north-east, unexpectedly attacked the bridgehead. The attack went through the covering force, and overran the ADS of 39 Indian Field Ambulance which had been established there the night before.

Much disorganisation had been caused by this attack, and the situation then appeared so serious that the destruction of the ferry steamers and of 300 sampans assembled on the west bank was ordered. Whilst all this was happening other parties of Japanese troops trusted south to attack the few troops and the now stationary transport in Mokpalin.



At 0930 hours on 22 February, a third attack developed against the 46th Indian Infantry Brigade, at that time some five miles east of Mokpalin. A block had been put down there and with the cut brush-wood blocking the jungle on each side of the track the retreating troops were in an unenviable position. The whole Brigade came under small arms and mortar fire. Pushing into the jungle the men sought to engage the Japanese. There was confused fighting in the dense undergrowth as the column strove to continue its advance. Three distinct actions were now in progress, at the bridgehead, in Mokpalin, and on the track to the east.

At the bridgehead nothing was known of the situation in Mokpalin. Japanese pressure was maintained against the defence throughout night. It was feared that the bridge might not be held against an attack at dawn. There were almost no troops west of the river and if the Japanese captured the bridge it would leave them in possession of the whole country. Accordingly, covering troops were withdrawn. At 0530 hours on 23 February the Sittang bridge was blown up.

In the morning the Japanese aircraft bombed the Indian positions and the massed transport in Mokpalin. Large fires broke out. The Indian troops still closely engaged were exhausted. The 3rd Gurkha on Budha Hill, with no ammunition, fighting to the last, had been overrun. The brigadier in command decided that an attempt must be made to cross the river that day and orders to this effect were issued.

Guns were disabled, and other weapons were thrown into the Sittang. Bamboos, petrol tins, and everything else that would float were used to build rafts. On these rafts as many as possible of the wounded were got away. The troops fell back and began to swim the river under heavy fire. Many displayed great heroism in assisting the wounded and those who could not swim. Not a few failed to make the crossing. From the area of the broken bridge the Japanese had withdrawn and here an officer and two NCOs of the Duke of Wellington's Regiment crossed the river. Returning with ropes they constructed a life line between the piers of the bridge. Themselves remaining in the river under fire, these three men assisted large numbers to cross to the west bank.

The 17th Indian Division thus became temporarily almost an unarmed body, without transport. It had only the few guns brought across the bridge, whilst losses in mortars, automatic weapons, and rifles were very high. Many men were without boots or clothes. A strength statement dated 24 February showed the division had been reduced to the strength of a brigade, though after that date many stragglers came in. All units that could be spared were sent to the back areas to re-organise. The remainder of the division, covered by the 7th Armoured Brigade, reorganised and re-equipped as quickly as it could.

On 23 and 24 February, following the destruction of the Sittang bridge, conditions were chaotic right up to Pegu. The Burma Military Hospital in Pegu was full of casualties. Several patients were suffering from exposure to cold and were discharged after being treated, reclothed

and fed. The medical services had suffered along with everybody else. Both ambulance trains, No 1 Burma CCS, and 23 Indian Field Ambulance were safe. 37 Indian Field Ambulance lost one medical officer, ten ORs and all its ordnance equipment. In addition, all the regimental medical equipment in the division and most of the ambulance cars were left behind. 37 and 39 Indian Field Ambulances were amalgamated and sent back to Yenangyaung to refit. The military hospital had moved from Pegu to Maymyo on 26 February and was opened as 3 Burma General Hospital.

By 6 March 1942, medical units of the 17th Indian Division were located as follows:—

ADMS 17th Indian Division	.. Hlegu 27·2 Milestone
13 Light Field Ambulance	
MDS open	.. Winkwin
ADS open	.. Hlegu 26 5 Milestone
ADS open	.. With HQ Armd Bde
1(B) Field Ambulance MDS open	.. Mile 24 Prome Road
23 Field Ambulance less ADS closed	Mile 21·7 Prome Road (Tauk- yan)
ADS open	.. Pegu under orders of 48th Bde
50 Indian Field Ambulance less ADS closed	Hlawga
ADS open	.. Pegu under order 63rd Bde
37/39 Indian Field Ambulance closed	Yenangyaung
22 Indian Field Hygiene Section	.. Yenangyaung
'C' Field Hygiene Sub Section	.. Yenangyaung.

The medical services right from the beginning of the campaign to the disaster at Sittang had functioned in most difficult circumstances. Most of the transport was lost at Kawkareik, some at Moulmein and then during fighting behind Bilin river. The road communications were bad and congested. The fighting was in a hilly area covered with dense jungle. In other regions there were paddy fields. The collection and evacuation of casualties were not easy jobs. Each OC of the field ambulance had to make the best use of what transport he had. Hand carriage had to be resorted to in most places. Despite all these difficulties patients were brought back and evacuated to Military Hospital Pegu from where two ambulance trains were evacuating them to Mandalay and Maymyo.

CHAPTER IX

The Fall of Rangoon

For Rangoon the war began on 23 December when it was heavily raided by Japanese aircraft. Material damage was slight, but civilian casualties were very heavy. About two thousand were killed, having failed to take cover owing to their ignorance or panic. A second raid on 25 December completed the disorganisation of the city. The casualties were not many but a general exodus of the civilian population added to the general confusion. In particular, the dock labourers ran away and work in the port almost came to a standstill. Ships with essential cargo could not be unloaded. They lay in the docks and delayed the arrival of other ships. Reinforcements and military stores were coming in and there was a vast accumulation of lease-lend material awaiting transport to China. The flight of labour seriously interfered with the handling of this material and the working of the transportation services was most precarious from this time onward. Thus the Japanese bombing brought about almost complete paralysis of the port of Rangoon at a time when it was essential that it should function in the most effective manner.

Besides labourers, evacuation included practically the whole of the bazaar population including the sweepers and many domestic servants. The whole closely knit social fabric of the city was disrupted. Food supply, municipal services and sanitation came to a standstill. Even the civil hospitals, packed with casualties from the raids, found it impossible to keep their non-medical staff despite their unwillingness to leave the patients.

For a period during January while the AVG and the RAF effectively protected the city against further attacks, there was some return of labour. The Japanese capture of Tavoy and the advance through Kawkaik, however, convinced large numbers of people that they would be safer in India or Upper Burma and the exodus was rapid again.

The civil defence organisation of Rangoon was totally unprepared for the attack when it came, as the preparations began too late and pushed half-heartedly, were quite inadequate. The essential element of morale was lacking. Under these circumstances it was not to be expected that the majority of the population would remain in areas subject to aerial attack. An evacuation scheme had been prepared, and camps were located outside the city to accommodate non-essential elements of population. Unfortunately, there was no machinery to limit evacuation to non-essential personnel or to control it and the essential and non-essential workers departed together. The Burmese scattered themselves in the countryside. The Indians believed that their safety lay only in keeping together and returning to India. Many thousands set out on foot for Prome and thence across the waterless Arakan Yomas to Taungup

intending to proceed to Chittagong by country craft. But at Taungup the country craft were too few to carry the numbers which had collected there; nor could this desolate coast support them. Soon the wells were dry or polluted with cholera. Thousands died and, as elsewhere under such conditions, the standard of human conduct became abnormal. When news of the happenings at Taungup came back the stream of refugees turned north into Upper Burma intent on reaching India by the Manipur valley.

Sporadic air raids continued. The army suffered very little direct damage from these air raids and the medical services none at all. The hospital at Mingaladon had a narrow escape for it was surrounded by RAF installations and was well within the target area. Therefore, one wing of the Civil Lunatic Asylum at Tada-U, which was well away from any military objective, was taken on loan and the hospital was moved there in five days. Meanwhile, the third ambulance train had come down to Rangoon from Mandalay where it had been made up in the railway workshops. It was staffed by a crew picked from various units including five nurses.

Owing to the danger of air raids and the quick Japanese attack it was evident that Rangoon was not going to be a secure base for long. The imperative need was to move stores and installations to Upper Burma as early as possible and obtain whatever accommodation was available. The principal medical installations in Rangoon were the Medical Stores Depots, one in the centre of the town and one at Insein on the outskirts; the depot of the Burma Hospital Corps in Sale Barracks and No 2 Burma General Hospital at Tada-U. It was arranged that the medical stores would be moved to Mandalay. The depot at Insein got away with considerable difficulty. Packing, loading and clearing over a thousand tons of medical stores with a very small staff and no outside assistance was remarkable achievement which was carried out, and transport was improvised by employing three diesel trucks of the Rangoon Corporation which were formerly being used to transport refuse and a few other miscellaneous vehicles, railway wagons or flats on the river. Shortage of labour was met by raising a small labour force from the scattered refugees outside Rangoon. In this manner medical stores of the army and a considerable amount of stores and equipment from civil hospitals and commercial dealers in Rangoon and from the docks were cleared without much loss, except four or five wagons which the railway staff were unable to move.

The depot of the Burma Hospital Corps was less fortunate. The morale of the BHC had deteriorated steadily. There had been many desertions but no recruits. Nursing orderlies were particularly difficult to get, and those who were recruited were of poor quality and ill trained. It was decided to move the depot to Sagaing in Upper Burma near Mandalay, but owing to administrative difficulties the actual orders for the move were delayed to the very last moment, and as a result the whole depot became very restless, which further increased desertions and lowered morale. Finally they were evacuated almost at the last moment, and left behind most of their records and reopened at Sagaing. No 2

Burma General Hospital moved by train to Prome where it opened in a school. 8 Indian CCS took over the hospital buildings in the lunatic asylum at Tadagale and functioned there for some time.

During this period the small embarkation staff in Rangoon did excellent work. Towards the end of February the hospital ship *Neuralia* came into port unexpectedly, and although she could only wait for a few hours, and no arrangements had been made to evacuate patients, they succeeded in getting some 300 cases away. This ship also took away the nursing staff of No 2 Burma General Hospital as it was at that time feared that they might be cut off and captured in Rangoon. Later the hospital was badly handicapped without them.

As the 17th Indian Division fell back first from the Salween and then from Bilin it became increasingly doubtful that it would be possible to hold Rangoon at all and steps were taken to evacuate everything and everybody not required to operate the port. Essential civilian services, such as water supply, electricity, and telephones remained working to the end, and the railways carried on with a skeleton staff.

From the medical point of view, the civil situation was less favourable. The Inspector General of Civil Hospitals was away on tour during the ten critical days before the civil evacuation and there appeared to be no one to give orders to the civil hospitals or to make adequate arrangements for their patients and staff. Finally the civil hospitals were closed down suddenly and completely. Their staff was ordered to leave in spite of the fact that they were anxious to continue to care for their patients who had not been evacuated. However, the army opened improvised hospitals for civilian cases. All Europeans, Anglo-Indians and Anglo-Burmese were removed to Prome except some who could not be moved. The remainder were fed on one meal a day (that was all the available resources could permit) until final evacuation. The lunatic asylum at Tadagale was reported to have been abandoned by its staff and superintendent. The gates of the asylum were opened and inmates were told to go wherever they liked. Some went to add to the confusion in the city, others only went outside the gates and camped there, completely at a loss to know where to go or what to do. Many would not leave their cells at all. The first stage of the official evacuation took place on 20 February when orders were issued to close the oil refineries at Syriam and remove all motor transport other than that marked as essential. Within a day or two Rangoon became a deserted city. In the suburbs where houses were mostly built of wood, great fires broke out and destroyed whole blocks of warehouses and factories. These fires were of no importance to the army and no attempt was made to control them.

On 21 February, Rear Headquarters, Army in Burma, closed down and was sent off by train to Maymyo. The DDMS, his ADH and one staff captain remained with advance headquarters in Rangoon in addition to the embarkation staff and the staff of the medical stores depot who were still loading stores. Then 8 Indian CCS moved on to the S.S. *Mysore*, taking with it a full load of patients and stores and

sailed for Prome and Mandalay. A light section of 8 Indian CCS was detached and sent off by road to Tharrawaddy, half way to Prome. Here it did excellent work during the withdrawal of the 17th Indian Division.

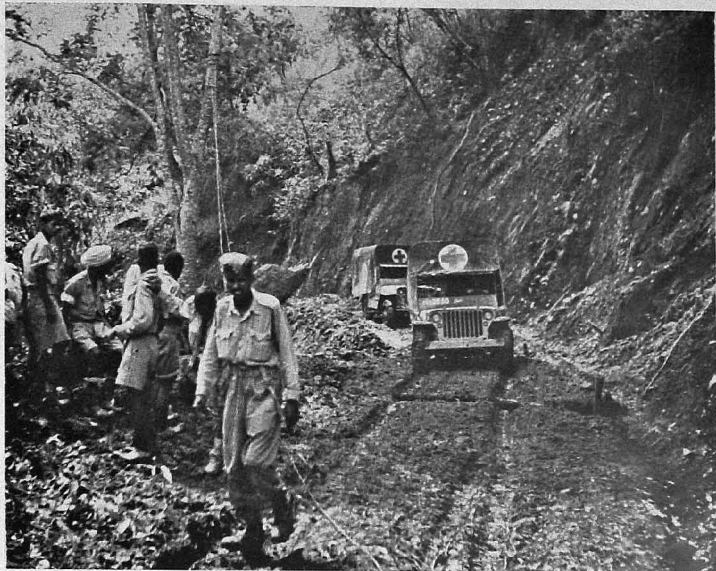
When 8 Indian CCS had moved out of Tadagale, an Advanced Dressing Station of No 1 Burma Field Ambulance opened there while the rest of the Field Ambulance was sent to milestone 23 on the Prome road, where it was conveniently sited to deal with casualties at the Taukkyan road block later on. Meanwhile, all administrative installations from Pegu were also moving north. The hospital was relieved on 16 February by No 1 CCS and sent north by train. A little later the CCS was relieved in its turn by 23 Indian Field Ambulance and fell back to Meiktila. All that remained in Pegu on 20 February was the equipment of 59 IGH, with a small baggage party consisting of a medical officer and twelve Indian other ranks which had arrived in advance of the hospital which never came. This party was also subsequently moved to Mandalay.

While fighting continued in the forward areas up to Pegu, medical facilities had been built up in the rear. In Prome, 2 Burma General Hospital was opened again in some school buildings, and 8 Indian CCS was on the river steamer *Mysore*, on its way to Mandalay. Two more ships, one large, one small—the *Kalaw* and *Fano*—were taken over as hospital ships from the Irrawaddy Flotilla Company. All the hospitals in north Burma were also expanded. In Maymyo, 41 IGH opened 1,000 beds, 3 Burma General Hospital from Pegu opened in a high school and 8 Burma General Hospital was to expand to 200 beds. In Mandalay 60 IGH was given two sections to expand first to 400 and then to 600 beds, and arrangements were made for the reception of hospital ships and the evacuation of casualties thence to the various hospitals by ambulance train.

Advanced Headquarters in Rangoon, in spite of the fact that the city was generally evacuated, recalled officers of the medical embarkation staff to help in the disembarkation of the 63rd Indian Infantry Brigade as it was decided to retain the city until the Brigade's disembarkation was completed. 50 Indian Field Ambulance had also been with this brigade but as its transport could not be unloaded it went back to India. In the last ships of this convoy there were some hospital stores and some ambulance cars of which the Burma army was grossly deficient. These ambulance cars proved of incalculable value and enabled 21 MAS whose personnel had arrived without the cars to function on a small scale.

TACTICAL SITUATION

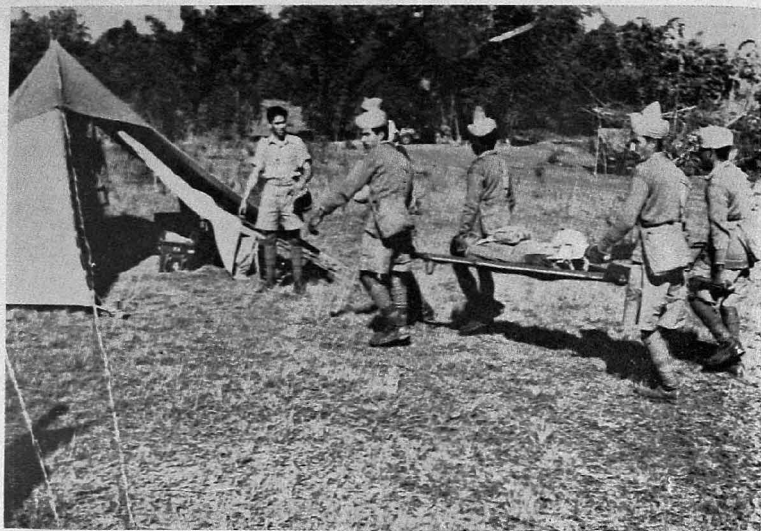
The 7th Armoured Brigade with 13 Field Ambulance had landed in Rangoon on 21 February. The brigade with the Cameronians and West Yorkshire battalions had left for Pegu to cover up the reorganisation of the 17th Indian Division. This force was again completely inadequate for the task. At this time the 1st Burma Division was concentrating in Nyaunglebin area on the main road to Mandalay. The



Evacuation of wounded from Jessami Track, Assam, June 1944.



39 Motor Ambulance Section, Ledo Road, March 1944.



An Advance Dressing Station on the Burma Front.



An Indian Military Hospital in Assam, April 1943.

remnants of the 17th Indian Division and the 7th Armoured Brigade were engaged in the Pegu-Waw areas. The 63rd Indian Infantry Brigade was in the process of disembarking. Its transport was still on board the ship. There was a gap of some thirty miles between the left flank of the 17th Indian Division and the foremost elements of the 1st Burma Division south of Nyaunglebin. It was known that the Japanese had infiltrated through this gap. The RAF reconnaissance and Burma Frontier Force patrols confirmed that a force of two thousand Japanese with light tanks was moving south-west through the Pegu Yomas. On 6 March, there were reports that they were only a few miles from the road and railway to Prome, Rangoon's last link with north Burma. Rangoon itself was quite indefensible. The 17th Indian Division was ordered to restore the situation by taking offensive action, but it was itself threatened with encirclement by the Japanese closing in on Pegu and not able to check the hostile advance.

On 5 March, General Sir Harold Alexander arrived to take command of the army in Burma. On 6 March, he decided that the retention of Rangoon was impossible and that the right course was to carry out demolitions, evacuate the city and regroup the forces northwards in the Irrawaddy valley. That evening he ordered that the denial scheme and the final evacuation should be carried out on the following day. The Rangoon garrison, the 17th Indian Division and the 7th Armoured Brigade were to fall back up the Irrawaddy valley along the road to Prome.

Meanwhile, at Pegu on the morning of 6 March heavy fighting had broken out. The Japanese attacked the town from the north and west and broke into the area round the railway station. The 48th Brigade, with the Cameronians and the West Yorkshire Regiment, held the town tenaciously and bitter hand to hand fighting went on all day. Meanwhile, four miles south of the town, in a patch of jungle astride the main road to Rangoon, the Japanese had set up a most effective road block.

Owing to the imminent evacuation of Rangoon a general withdrawal was decided upon to begin on the morning of 7 March. The road block to the south was to be attacked as soon as the ground mist had cleared. The road bridges over the river and railway in the town were blown at first light, and troops and transport moved out. The rearguard was at once attacked but it held off the Japanese. Soon, however, the whole column came under mortar and machine-gun fire from positions west of the road. Japanese snipers were posted on trees and on house tops, and parties of Japanese troops broke through to the road. A bayonet charge by the 4th Gurkha led by their commander eased the situation.

The guns of the RHA battery attached to the Armoured Brigade concentrated on the block, then the 7th Hussars with a company of the West Yorkshire Regt. stormed forward. Some transport followed, but the road was packed with derelict vehicles, and there was some delay. Having forced the block the tanks and guns went on. The

Japanese closed in during the afternoon, the block was again cleared but it had been a costly engagement, especially notable for the number of officers who had been killed by snipers.¹

While the battle at Pegu was going on the final evacuation of Rangoon had begun. On the morning of 7 March the Advanced Army Headquarters set out for Prome in a long column of trucks, while behind them the oil refineries at Syriam were demolished and the port, power houses and pumping stations of Rangoon blown up. As the last demolition parties withdrew by road and ship, the city lay deserted in a twilight of desolation under a vast pall of smoke.

Meanwhile, twenty-two miles north of the city, in a rubber plantation at Taukkyan, the leading lorries of the convoy had run into another Japanese road block and compelled to halt. Against this block were thrown some tanks of the 7th Armoured Brigade and all available troops. All day the battle continued while the demolition parties, their task completed, came out and joined the mass of troops, held up on the roadside.

The medical units were crowded close together in the rubber plantations. They were holding large number of casualties, many of them serious, and it was fortunate that they were concealed from the Japanese bombers. By 1730 hours on 7 March, when it was already dark under the heavy clouds of smoke from the burning oil tanks at Syriam, the attack was called off. All troops leaguered for the night in the rubber plantations. Within the perimeter were crowded every type of administrative unit and officers, all of whom spent an uneasy night wondering what the next day would bring, for the situation of the force appeared to be very serious. The Japanese held a strong position across the road, from which part of the 63rd Indian Infantry Brigade and the tanks had failed to clear them, and they had suffered heavily in the attempt. Assistance could only come from the 17th Indian Division, then moving towards Taukkyan but the division was depleted and tired from the recent heavy fighting and was still very short of men, arms and vehicles. General Alexander ordered another attack for the following morning. The attack went in at first light supported by artillery. The tanks attacked down the road with the battalions of the 63rd Brigade behind them and on each flank. The leading tanks went right through the block. There was no opposition. The Japanese had gone.

All that day and through the following night the Allied forces moved north to Prome under heavy air attack. A medical convoy of all available ambulance cars was made up and a large number of casualties successfully evacuated to the Light Section of 8 CCS at

¹The OC 23 Field Ambulance, who had been wounded in a bombing attack on Pegu was being evacuated in an ambulance which was held up in this road block. The car was charged by a party of Japanese. All the wounded who could do so jumped out, scattered and hid in the jungle by the roadside. The Japs riddled the car with automatic fire, but by an extraordinary chance neither OC 23 Indian Field Ambulance nor another officer, who being unable to move and were shamming dead inside were hit. The Japanese peered in and were satisfied with the look of them, then they climbed on to the roof of the car, mounted a machine-gun there and opened fire down the length of the halted transport column. There they remained for an hour until they were dislodged by another attack put in by the Gurkhas and both the injured officers were evacuated in carriers.

Tharawaddy. There remained some forty sitting cases who were loaded into passing lorries and in this way all casualties were cleared, only some equipment was lost for lack of transport when the 17th Indian Division moved to Taikkyi that evening. 23 Field Ambulance had moved first in the pooled transport of both Field Ambulances. This transport was unable to return against the stream of traffic. 50 Field Ambulance then marched all night bringing up the rear of the division.

Next day the Advanced Army Headquarters went on to Maymyo, as originally planned, and after a march under difficult conditions the 17th Indian Division reached the Tharawaddy area where intensive reorganisation and re-equipment were carried out.

CHAPTER X

Medical Situation after the Fall of Rangoon

It will be appropriate to review medical arrangements of the withdrawing troops at this stage. There were approximately ten General Hospitals open and working, four in Maymyo, two at Mandalay, two in the Shan States and one each at Meiktila and Prome. There were also four Casualty Clearing Stations, two Indian and two Burma units. The two Indian CCSs were converted to floating hospitals on the *Mysore* and *Siam*. No 1 Burma CCS was with the Chinese at Meiktila and No 2 was moving to Myingyan.

The standard of nursing and of hospital accommodation was good. Most of the hospitals were situated in good buildings. Their personnel was not well-trained, but this was compensated by the will to work and get the job through by all means at their disposal. It was a splendid team work. The principal difficulty in all hospitals was the gradual disappearance of cooks, washermen, and sweepers. They were hard to get and harder still to keep.

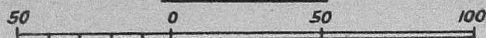
There were at that time no convalescent depots in Burma and there was little hope that any could come from India. As the campaign progressed hospital beds became choked with convalescent cases, and to meet the need several convalescent depots were improvised with considerable success although their existence was short. The sick rate was low, for it was the healthy season, and so far there was little dysentery or malaria.

The only serious epidemic that occurred at this time was an outbreak of cholera round Prome. Consequently almost the whole of the 17th Indian Division had to be inoculated. Owing to poor communications, there was considerable delay in getting the vaccine and a few cases of cholera occurred among the troops. The Pasteur Institute in Rangoon had been moved complete to Meiktila. There it continued production of vaccines and sera. For a while the demands of the army exceeded both the output and the reserve but the deficit was made up and soon the whole army was protected. Despite the very high risk to which all were exposed in the later stages of the campaign there was no epidemic in the armed forces; the solitary exception was of a sudden outbreak of 100 cases in a Burma Frontier Force Unit, which had escaped inoculation, just before the retreat to Kalewa began. These cases caused considerable anxiety but at no time was the health or the efficiency of the army threatened.

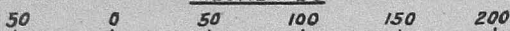
Casualties were known to be very heavy but no accurate figures were available, returns from the hospitals being very slow and irregular. All the casualties were also not due to the Japanese action. For example, when the Royal Inniskilling Fusiliers were flown in from India to Magwe, fourteen of them were in hospital from road accidents within thirty-six hours of their arrival, before they had even seen the Japanese. In Rangoon, during the evacuation, road casualties due to dangerous driving reached their peak. Nine serious cases and one

MEDICAL SITUATION AFTER THE FALL OF RANGOON

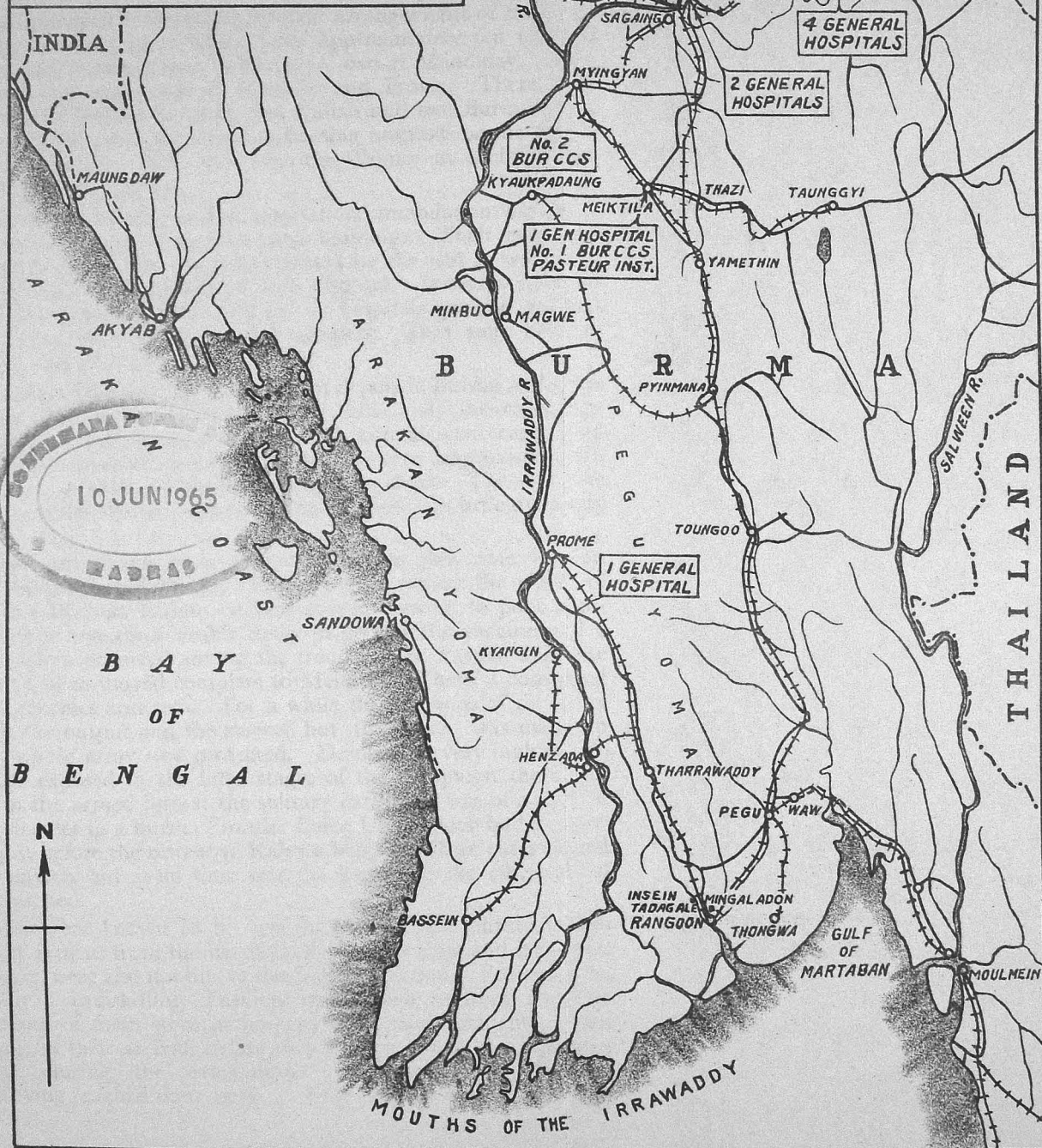
SCALE OF MILES



KILOMETRES



LOCATION OF MEDICAL UNITS... No. 1 BUR CCS



death occurred in one night from five separate accidents. To a lesser degree this state of affairs was common all over Burma.

Evacuation of casualties was mainly by river to Mandalay since most of the troops were concentrated in the Irrawaddy valley. As the Indian troops retreated north the journey was becoming shorter but even so river evacuation was not easy for various reasons including exceptionally low water in the river, desertion of crew, difficulties in rationing and epidemic of cholera among the civilian population. In addition to the *Mysore*, *Kalaw* and the *Siam* there were four or five small steamers on the river. Their number varied from time to time. There were two ambulance trains which were chiefly employed in Upper Burma.

Ambulance cars were in short supply throughout the campaign, but at this time the shortage was less acute than at any other, for there were alternative methods of transport available. In the course of the retreat from Rangoon a number of additional cars were acquired. Medical stores were in a very satisfactory state. The consignments from Rangoon were collected, sorted and issued from Mandalay. Indents had been placed with India, fulfilment of which could reasonably be expected by air.

Field Ambulances by then had acquired sufficient experience to develop a method of working, suitable to the type of warfare in which they were engaged. The full company of the field ambulance was seldom used to form an ADS. Instead a light ADS was made up of one medical officer, one RAMC orderly, eight ambulance sepoys, a cook and a sweeper. If a larger ADS was required two such light sections were used. When the division was on the move, a light ADS, fully mobile in one 30 cwt. lorry, and two ambulance cars, were attached to each brigade. This simple procedure proved very satisfactory. The light ADS was equipped with one medical pannier, six surgical haversacks packed with dressings, a set of Thomas' splints and a number of stretchers and blankets.

The equipment of the field ambulance was found to be much too heavy for this type of warfare and much of the tentage and other heavy ordnance equipment had to be abandoned early in the campaign. A very large amount of regimental medical equipment was also lost, and some regiments lost their equipment several times. Although these losses were sometimes preventable it was considered that they were partly due to the unsuitability of the existing pattern of regimental medical panniers, and it was suggested that field surgical haversacks and medical panniers which might be carried by the regimental stretcher bearers would be adequate equipment for a regimental aid post, and would not be lost so readily as the panniers.

In spite of acquiring a considerable number of vehicles by salvage and repair, the field ambulances of the two divisions were extremely short of transport. In the 17th Indian Division, 37 Indian Field Ambulance had been withdrawn from the battle area and had no transport. 23 and 50 Indian Field Ambulances had between them twelve ambulance cars, twenty 30 cwt. trucks, and two 3 ton lorries. This was

considerably in excess of the authorised allotment on the lower scale establishment, but it was still insufficient. All vehicles were pooled to form a medical transport company under the MT Officer of 39 Indian Field Ambulance who was responsible for their maintenance and repair. This transport pool was usually divided between two field ambulances so that one field ambulance was completely mobile and the other had enough transport to lift its equipment but not its personnel. Sometimes it was possible to send back transport from the lorry borne field ambulance and lift the personnel of the second unit, but very often the vehicles were unable to return against the stream of traffic. This meant that the marching field ambulance was frequently left far in the rear of the division. It was only because the Japanese did not follow up the withdrawing troops that heavy casualties among medical personnel did not occur. Lack of transport also involved the field ambulance having no rest. The unit that was moved by MT had to open and work immediately after its arrival at its new location while the second ambulance spent the period when it was not working in marching.

In the 1st Burma Division the field ambulances were even worse off. The two Burma field ambulances were raised on totally inadequate scales of transport, six ambulances and three 30 cwt. trucks each. No 2 Burma Field Ambulance had lost several ambulances on the dangerous Shan States roads while No 1 had lost all it possessed at Moulmein and picked up a miscellaneous collection in Rangoon. The third field ambulance, 57 Indian Field Ambulance, which had come with the 13th Indian Infantry Brigade had only one ambulance left on the road due to detective half shafts which broke after a few hundred miles of running. Thus in both the divisions there were never enough ambulance cars. The field ambulance which was working required at least ten cars. Usual commitments were two ambulance cars with each brigade and one with the divisional recce regiment leaving the MDS only three cars for evacuating casualties to the railhead. Though this was hardly the bare minimum it could generally be found only by giving all available cars to one field ambulance. It was thought that each field ambulance should have ten or twelve ambulance cars. During this period mules also were of not much avail and were usually sent back with the Divisional Animal Transport Column.

It may be added that during this period, which was one of intense Japanese air activity, and throughout the rest of the campaign, the Japanese never bombed a hospital area which was clearly marked as such. At Maymyo two "overs" from the bazaar area hit No 3 Burma General Hospital, but these were accidental. Much later in Imphal one bomb hit the laboratory in the civil hospital, but that was probably also an "over" from the Residency. On one occasion the Japanese gave a definite warning to a medical unit to move out of the target area. In mid-March while the *Mysore* with 8 Indian CCS on board was moored at a jetty near Prome a flight of planes circled low over it and then dropped one bomb about a hundred yards away on shore. The OC took the warning and moved two or three miles up stream immediately. Six hours later Prome, including the area where the *Mysore* had been moored, was heavily bombed.

CHAPTER XI

Battle of Shwedaung

The lull following the evacuation of Rangoon was broken towards the end of March. The new phase was marked by destruction of the small Allied Air Force, Japanese capture of Toungoo and local Allied offensive south of Prome and subsequent withdrawal from that town to Allanmyo area.

On 21 March, Allied aircrafts fought a magnificent air battle destroying nine Japanese planes in the air and sixteen on the ground at Mingaladon. The Japanese reacted vigorously and greatly crippled the airforce at Magwe on the following day. Further air help then could only come from bases in India or China.

The 55th Japanese Division marched against Toungoo while the 33rd Division attacked Irrawaddy valley. The 56th Division at the same time was advancing through the Shan States. The 55th Japanese Division encircled the Chinese Fifth Army by a sweeping move but after a stubborn battle on 29 March fell back on Yedashe. To relieve the pressure on the Chinese, the 17th Indian Division was ordered to launch a local offensive south of Prome. But the Japanese were already at Padigon which indicated that Prome was threatened by a Japanese attack six miles north of Paungde flank. Part of the Allied force was diverted to counter this threat. Heavy fighting followed both at Padigon and Paungde. Although considerable losses were inflicted upon the Japanese they were continually reinforced and the Allied forces could make no progress.

Meanwhile, the Japanese who had advanced up the east bank of the Irrawaddy got astride the main road at Shwedaung behind the Allied striking force and blocked its withdrawal. The striking force at once turned back to fight and then followed one of the fiercest battles of the campaign. The force moving north encountered a road block two miles south of Shwedaung which was attacked but could not be cleared by the evening of 30 March. On the following day the battle was resumed. The Japanese fought stubbornly but by 1030 hours the block was liquidated. The transport column then began to move forward but was soon brought to a halt by a second block in the town itself. Attempts were made to find a diversion down the side roads but failed. In the afternoon the densely-packed column of transport in the town was heavily bombed causing many casualties. It was evident that there was little prospect of the unarmoured vehicles passing through the town. There was also little time to lose since the rearguard was in contact with the Japanese coming up from the south. However, at 1800 hours orders were issued to abandon transport. All troops in Shwedaung were to get out to the north on foot. The tanks, with considerable loss, forced a passage for themselves and for 414 Battery RHA¹. The striking force

¹Their medical officer found himself alone with the wounded at the south end of Shwedaung. Puzzled by the sudden silence he went forward to find the town abandoned by the troops. All the wounded were promptly loaded on the vehicles. A burning truck blocking the road was cleared and the small column made its way out under machine-gun fire.

retired towards Prome where the available units were reorganised. The Japanese had been hard hit but the British and Indian casualties had also been very heavy and much equipment including eight tanks and two guns had been lost.

During the battle four ambulance cars were allotted to the armoured brigade and one to each of the three battalions taking part in the attack. ADSs were disposed with the three Indian Infantry Brigades viz. one ADS each from 50 Indian Field Ambulance with the 16th Indian Infantry Brigade and the 63rd Indian Infantry Brigade and one ADS from 23 Indian Field Ambulance with the 48th Indian Infantry Brigade. 13 British Light Field Ambulance established a MDS at Shwedaung by 0600 hours on 29 March to treat British casualties. 50 Indian Field Ambulance had a MDS already open one mile east of Prome to receive all Indian casualties.

As the Japanese infiltrated in Shwedaung, the MDS of 13 British Light Field Ambulance under rifle fire was withdrawn to its original site at milestone 183/2, leaving a forward ADS with four ambulance cars.

On the first day (29 March), no casualties reached the ADS from the south of the block. As a result of an attack on the road block from the south the situation eased somewhat in the afternoon of 30 March and tanks and armoured vehicles began coming through. Many casualties were brought on these vehicles to the ADS and were sent back to MDSs. Later when, at about 1800 hours, unarmed vehicles could make their way through, a considerable number of casualties was received. Six 3 ton lorries were placed at the disposal of ADS to evacuate the casualties back to MDS. By the evening some 200 casualties had been received and treated by the two MDSs. On the following morning all casualties were cleared to Allanmyo by 21 and 22 MASs.

On 1 April, the 17th Indian Division had taken up positions for defence of Prome area, the 63rd Indian Infantry Brigade was in Prome, the 48th Indian Infantry Brigade was in Hmawza area and the 16th Indian Infantry Brigade in reserve in the region of 183 milestone. The medical units were located as follows:—

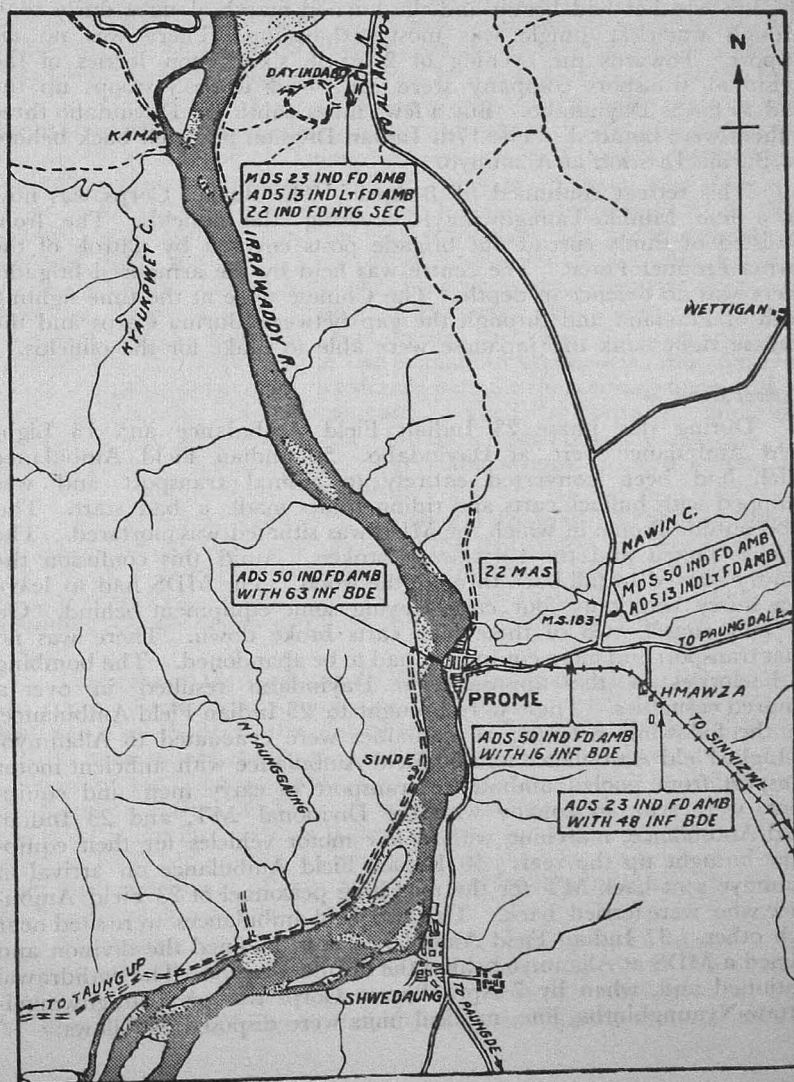
ADS	50 Indian Field Ambulance	..	Prome (with 63rd Inf Bde)
ADS	" " " "		Prome—Allanmyo Road (with 16th Inf Bde) about 3 miles north of Prome
MDS	" " " "	..	East-side of Prome—Allanmyo near MS 183
ADS	23 " " "	..	Hmawza (with 48th Inf Bde)
MDS	" " " "	..	Dayindabo
ADS	13 British Light Field Ambul- ance	..	Dayindabo
ADS	" " " "	..	Near MS 183
22 MAS	" " " "	..	Near MS 183/4 Prome—Allanmyo Road
22 Indian Field Hygiene Section		..	Dayindabo
37 Indian Field Ambulance		..	Moving to Allanmyo.

BATTLE OF SHWEDAUNG

LOCATION OF MEDICAL UNITS

1ST APRIL 1942

SCALE OF MILES



CHAPTER XII

The Loss of Yenangyaung

Following the loss of Toungoo and Shwedaung, it was decided to regroup Burma Corps in Allanmyo area or even further back where tanks could operate in an open country. Burma Division was concentrating in Allanmyo area and one of its Brigades had gone over to the west bank of the river. Japanese had thrust north from Prome to Dayindabo and the 17th Indian Division withdrew to intercept this move. The hot weather had begun and the hurried march along a dusty road through waterless jungle was most exhausting. There was no air support. Towards the evening of 2 April, sixty 3-ton lorries of the divisional transport company were sent back to ferry troops up the road as far as Dayindabo. But a few miles south of Dayindabo three of them were bombed. The 17th Indian Division now fell back behind the Burma Division at Allanmyo.

This retreat continued till 8 April. The Burma Corps was now on a line Minhla-Taungdwingyi covering the oilfields. The front consisted of thinly spread out brigade posts covered by patrols of the Burma Frontier Force. The centre was held by the armoured brigade. There was no defence in depth. The Chinese were at the time fighting south of Pinmana and through the gap between Burma Corps and the Chinese right flank the Japanese were able to make for the oilfields.

Medical Cover

During this phase 23 Indian Field Ambulance and 13 Light Field Ambulance were at Dayindabo. 50 Indian Field Ambulance which had been converted entirely to animal transport and was equipped with bullock carts and riding mules made a bad start. The wood outside Prome in which the MDS was situated was mortared. The bullocks bolted and the carts were broken. Amid this confusion the infantry started to fall back through the wood. The MDS had to leave in a hurry with only four carts leaving some equipment behind. On the long march two of these four carts broke down. There was no other transport and more equipment had to be abandoned. The bombing of the lorries on the approach to Dayindabo resulted in over a hundred casualties. These were brought to 23 Indian Field Ambulance. On the following morning all casualties were evacuated to Allanmyo. 13 Light Field Ambulance and 50 Field Ambulance with sufficient motor transport from pooled ambulance transport to carry men and equipment, were sent in convoy with the Divisional MT, and 23 Indian Field Ambulance, marching with a few motor vehicles for their equipment brought up the rear. 50 Indian Field Ambulance on arrival in Allanmyo sent back MT for the marching personnel of 23 Field Ambulance who were ferried back. The two field ambulances were sited near each other. 37 Indian Field Ambulance now rejoined the division and opened a MDS at Allanmyo behind the Burma Division. The withdrawal continued and, when by 7 April Burma Corps was on Taungdwingyi-Sattaw-Nyaungbintha line, medical units were disposed as follows:—

MDS 23 Indian Field Ambulance	} .. Taungdwingyi
MDS 37 Indian Field Ambulance	
22 Indian Field Hygiene Section	
22 Indian MAS	
MDS 50 Indian Field Ambulance	.. Sattahwa
ADS 50 Indian Field Ambulance	} .. Nyaungbintha with 16th Bde and 63rd Bde.
ADS 50 Indian Field Ambulance	

23 Indian Field Ambulance was dealing chiefly with the casualties of the 63rd Infantry Brigade and 37 Indian Field Ambulance with the casualties of the 16th Infantry Brigade. 50 Indian Field Ambulance was evacuating casualties to 23 Indian Field Ambulance. Evacuation of casualties from MDSs was to Magwe.

On 10 April, the forward screen was in contact with the Japanese. On the following day the two brigades around Kokkogwa and Powe (11 and 18 miles east of Taungdwingyi) were in action. The battle of Kokkogwa was noteworthy. The night of 11 April was dark and rainy. The Japanese penetrated the brigade headquarters area. The situation was critical right through the night but by day-break the Japanese had withdrawn and lively counter-attack cleared the area. On the night of 12/13 April the Japanese attacked again but were repulsed. Japanese pressure on the 1st Burma Division south of Magwe continued and a wide gap was caused between the two divisions. Through this gap between the two formations Japanese columns hastened by unfrequented tracks and dry stream beds for the Yenangyaung oilfields north of Magwe. Using local carts, assisted by Burmese, and often wearing Burmese clothing, the Japanese passed freely through the sparsely populated countryside. The Allied troops received remarkably little information of their movements.

The two weak brigades of the Burma Division (1st Burma Brigade and 13th Brigade) on the east bank of the Irrawaddy now bore the main brunt of the Japanese attack. Advancing up the east bank of the Irrawaddy the Japanese took Migyaungye by a surprise attack, thus compelling the defending troops to withdraw to the line of the Yin Chaung, south of Magwe.

Throughout 14 April, the KOYLI was attacked in an isolated position south of the Yin Chaung and eventually fell back after severe fighting. On 15 April, the Japanese probed the Yin Chaung line, and at 0100 hours on 16 April, assaulted the sector immediately east of the junction of the Chaung with the Irrawaddy. The 7th Rajput and 5th Battalion Burma Rifles were in the front line, and were overrun by repeated determined attacks before dawn. 1st Battalion Burma Rifles and the KOYLI, now at a strength of about 200, were thrown in to cover the withdrawal of transport and the forward troops. The line of the Yin Chaung was lost.

The Burma Division was soon after operating in an almost waterless area. The next possible defensive line was that of the Pin Chaung immediately north of Yenangyaung and some 40 miles by road from the Yin Chaung. Magwe was, therefore, evacuated, and the division

fell back towards the Yenangyaung Road. Water dumps had been established, but the troops suffered much from intense heat. On the evening of 16 April the Burma Division halted near the dry Kadaung Chaung, a long day's march south of Yenangyaung. Leaving one squadron to act as rearguard to the division, the armoured brigade went on to the Pin Chaung.

On 15 April, in view of the growing threat to the oilfields, the commander of Burcorps had ordered their demolition to be carried out. By that evening the task had been completed. The officer-in-charge of the denial scheme and a few assistants remained to deal with the Power Station. Around them was ample evidence of the thoroughness with which their demolitions had been carried out. The whole of the tank farm containing millions of gallons of crude oil was a vast sheet of fire rising many hundreds of feet. Wells, plants and vital installations were burning everywhere and the sky was darkened by a huge pall of smoke. Explosions resounded across the oilfields.

In Yenangyaung itself there still remained a tiny garrison, headquarters and one company of the Gloucestershire Regiment. The equipment available was extremely short. Their mortars and automatic weapons had been made over to the troops going forward. Now that the oilfields had been destroyed their main task was to guard the roads through Yenangyaung. From this point the road led to Meiktila and Mandalay and there was a stream to cross. The leading vehicles crossed to Chauk at 2230 hours on 16 April. Some two miles north the Japanese suddenly opened fire on the column and one of the trucks was set ablaze. This burning truck acted as a road block and the Japanese seized the ford and the village to the north. They then entered Yenangyaung and the handful of Gloucesters there fell back fighting. On 17 April the Chinese 38th Division reinforced Burma Corps north of this ford. A small force kept on fighting in the Yenangyaung area but the rest of the division late that night reached Yonzek at milestone 358. Thus fighting and retreating went on till Kyaukse was reached.

During the fighting along the Irrawaddy, 2 Burma Field Ambulance put the MDS on a river steamer and fell back up the river just behind the fighting troops, picking up casualties from the bank and moving again when Japanese bombs started to drop around. The surgeon was working all the time in his improvised theatre on the main deck. During the confused fighting, north of Pin Chaung, 57 Indian Field Ambulance evacuated all casualties to a CCS working on a steamer on the river Irrawaddy. This evacuation meant carrying the wounded in close proximity to the blazing oil wells whose flames scorched the ambulance cars even at a distance of hundred yards. This field ambulance had been left behind in an exposed position and was surrounded by the Japanese. The second-in-command of the field ambulance made a dash for assistance in a 15 cwt truck and got away. The remainder were captured and locked in a wooden hut which was set alight. Of a total of 170 men only 35 could escape.

The armoured brigade and the 38th Chinese Division continued the battle. The delayed attack took place that evening and Twingon was

entered from the north. Some two hundred British prisoners were released. Next day the Chinese without tanks penetrated into Yenangyaung, fought off a counter attack, and held their ground. On 21 April the Allied forces withdrew north of the Pin Chaung.

For some three days the division had undergone excessive physical hardships. Many were killed and wounded. The casualties had a very bad time, for the division had lost a complete field ambulance (less a detached company) and thus remaining units were severely handicapped. Short of water and transport, constantly moving under fire, they did what they could for those in their charge, who bore their suffering with heroism and were at last carried to safety.

It had been a bitter and terrible battle, in some ways comparable to the disaster which the 17th Indian Division had suffered at the Sittang bridge. During this period medical units of the 17th Indian Division had a hard time. By 20 April, 50 Indian Field Ambulance and 22 Indian Field Hygiene Section were in Meiktila, MDS 23 Indian Field Ambulance in Taungdwingyi with its ADS in civil hospital and MDS in Pyangyi Chaung.

LOSS OF SHAN STATES

The loss of Rangoon had a most serious effect on the campaign. After the fall of that city the army was cut off from all outside assistance and was with no lines of communication. It could only be supplied by air, a mode of very limited capacity at that time. The only reserves of stores were those that had already been moved north and these had to be back-loaded stage by stage throughout the campaign. Maintenance of transport and equipment also became a matter of great difficulty as most heavy repair installations had been destroyed in Rangoon. The loss of the oil refineries in Syria and Yenangyaung had greatly reduced the amount of available petrol and lubricants. The construction of a road linking the Chindwin river with Imphal in Assam had been started but progress was slow and the road for many months could not be in a fit state to maintain the army in Burma.

At the end of December, General A. P. Wavell had flown to Chungking to interview Generalissimo Chiang Kai-Shek who offered the Fifth and Sixth Chinese Armies for the defence of Burma. This offer was accepted. In the middle of January when it was clear that the Japanese attack on Tenasserim was developing, the 93rd and 49th Divisions of the Sixth Army were ordered into the Shan States and the third division, the 55th, was moved to Wanting on the border to complete its training and equipment. The Chinese were given their own area of operations and as they moved into the Shan States, Indian forces withdrew.

Early in February, Lieut-General T. J. Hutton flew to Lashio, met the Generalissimo there and arranged with him for the Chinese Fifth Army to take over the Toungoo front. The three Chinese divisions of the Army had some motor transport, but little armour and artillery. It was one of the best equipped and was considered one of the finest

fighting formations in China. Unfortunately it was not till the end of February that it started to move into Burma and when Rangoon fell early in March only its 200th Division had arrived.

General Loo, Chief Surgeon-General of the Chinese forces, and General Robert Lim, Surgeon-General of the Chinese Red Cross had come to Burma in March to make medical arrangements for their Expeditionary force. Shortly afterwards Colonel Williams, U.S. Medical Services Chief Surgeon at General Stilwell's Headquarters with the Chinese Armies, came to the DDMS Burma Army to arrange with him the details of the medical arrangements. The Chinese medical resources were very inadequate. They had a total of four surgeons and some 30 trained dressers for an army of 20,000 men. Fortunately two American Volunteer Units were available to supplement the scanty resources of the Chinese themselves. One American field ambulance unit¹ had come fully equipped as a field medical unit for service with the Chinese armies in China but had remained in Burma to serve them there. They were keen and capable, and did magnificent work. The second unit was of quite a different character. It was the American Baptist Mission field medical unit raised and equipped by an American medical missionary, Doctor Seagrave, who for many years had lived and worked on the Burma-China frontier. Both these units did very valuable work. The Chinese forces were allotted No 1 Burma CCS and No 2 Burma Staging Section, part of No 2 Burma General Hospital at Taunggyi and a 100 bedded section of 41 IGH. They were also given all the medical supplies that they asked for since they had almost none of their own. These arrangements were of limited extent considering the size of their forces and the numbers of wounded which were to come in. But in practice they were reinforced and supplemented by all the British and Indian medical units who treated the Chinese patients whenever possible.

For evacuation of casualties the Chinese were given one ambulance train and a hospital ship the *Siam*. Of these, however, they could make very little use.

As everywhere, language problem presented difficulties, but luckily there were among the medical services a sprinkling of officers and nurses who could speak Chinese. A Chinese RAMC officer turned up just when he was most needed and he was made Medical Liaison Officer. Later he was attached as medical representative with the Chief Liaison Officer to the Chinese armies.

¹For details of these units see volume on Administration.

CHAPTER XIII

Administrative Reshuffle

While fighting was going on at first around Prome and then in the defence of the oilfields, the administrative layout behind the army was being reorganised as far as circumstances permitted. The medical services like all others led a somewhat hand to mouth existence during this period, striving to attain stability in a situation in which it was inherently absent. Nos 1 and 4 Burma General Hospitals at Taunggyi and Kalaw during March, in Chinese area, had received no orders of any sort and were feeling somewhat isolated. They were warned to prepare to move to Shwebo. The only unit in Myingyan was the baggage party of 59 IGH from Pegu which was running a small hospital. In Maymyo there was plenty of work to be done. The operational plan changed rapidly as the campaign developed and the medical plan changed also in accordance with it.

The Tamu-Kalewa-Ye-U road was now the most important project, but work proceeded very slowly and it was evident that it would not be possible to use it for some months. Medical arrangements for labour to be deployed on the construction of the road were discussed with the Burma Government medical authorities and with the DGIMS who arrived in Lashio to organise medical arrangements on Kalewa road. Malaria surveys were undertaken by two malariologists who advised on the layout of camp sites and installations. The Burma Health Department also sent personnel to supervise the sanitary arrangements for the workers and refugees along the road.

On 25 March, after the fall of Toungoo, it was decided to retire to the east-west line through Taungdwingyi and a new three pronged line of communication was laid out leading on the one side to India and on the other to China. To India there were two routes, one by the Chindwin from Monywa to Kalewa and thence by road to Tamu and Imphal, the other by rail from Shwebo to Myitkyina and thence north through the Hukong valley to Digboi in north Assam. To China there was but one road, the Burma-China road from Mandalay via Maymyo to Lashio and so across the border into China.

This new layout entailed a complete redistribution of medical units and stores and orders for the following changes were issued to be completed by 15 April—

(a) *To the North-west*

- (i) 2 Burma General Hospital and No 2 Burma Medical Stores Depot (200 tons) from Yenangaung to Monywa.
- (ii) 2 Burma CCS from Myingyan to Monywa and Kalewa.
- (iii) 16 Indian Staging Section, to Kalewa and on to Tamu.

(b) *To the North*

- (i) 1 Burma General Hospital, from Kalewa to Shwebo which was now the air evacuation centre.
- (ii) 13 Depot Medical Stores (200 tons) from Mandalay to Shwebo.

- (iii) 4 Burma General Hospital, from Taunggyi to Myitkyina.
- (iv) 41 Indian General Hospital, from Maymyo to Katha.
- (v) 59 Indian General Hospital, from Myingyan to Katha.
- (vi) 400 tons medical stores from Mandalay to Myitkyina.
- (vii) 5 and 8 Burma General Hospitals from Maymyo to Mohnyin, 100 miles south of Myitkyina.

(c) *To the North-east*

- (i) 7 Burma General Hospital with 3 Field Laboratory and medical stores from Maymyo to Bhamo.
- (ii) BHC, HQ and Training Wing, from Sagain to Bhamo.
- (iii) 3 Burma General Hospital, from Maymyo to Lashio.
- (iv) 200 tons of medical stores, from Mandalay to Lashio.

(d) *Other moves*

- (i) 6 Burma General Hospital, from Meiktila to Sagaing.
- (ii) 2 British Staging Section, to Hill Barracks, Mandalay.

From the above list of moves it may be seen that almost every hospital in the force except those in Mandalay was moving or was under orders to move.

The medical stores depot at Mandalay had collected and sorted over 1,000 tons of medical stores, including amongst other things three and a half tons of cinchona which was being converted into tablets in Mandalay jail. Transport from the most unlikely sources was obtained and 200 tons of stores were sent to Lashio and a similar quantity to Monywa and Shwebo. Most of the remainder was put on rail for Myitkyina. The vaccine and sera laboratory was moved to Namtu where there were laboratory facilities. A herd of prize cattle from the Agricultural Department was acquired and sent to Mohnyin, far north, to act as a dairy herd for the hospitals which were going there.

For the hospitals it was one thing to order moves and another for them to be carried out. Movement Control had very many difficulties to contend with as communications had become hopelessly unreliable. Railways were being heavily bombed and the lines sabotaged and ordinary running was completely interrupted by Chinese troop movements. Ambulance trains could only be sent with difficulty and when sent were out of all touch till they rolled up with a load of patients.

The difficulty was to try and retain sufficient beds in use to cover current requirements while the hospitals moved. The medical services were badly handicapped by having no convalescent depots. The British beds were very short. To make matters worse cases were pouring into Mandalay by train and hospital ships. 300, 500, 900 and then 1200 were notified as coming in, many of them British casualties from the heavy fighting in the oilfields.

No 6 Burma General Hospital which had been in the middle of heavy bombing at Meiktila moved to Sagaing where it was converted to a VD hospital and its bed strength was increased to 600. Next, 2 Burma Staging Section was moved into the Hill Barracks in Mandalay and, though ordered to open as a convalescent depot for British troops, it soon became a hospital holding over 100 patients. No 1 Burma General

Hospital from Kalewa got through to Shwebo and opened there in school buildings and tents.

Shwebo became the centre of air evacuation and many cases were got away by air. The transport planes came in without notice usually just before dark and stayed on the ground for as short a time as possible lest they be caught by Japanese fighters. A small detachment hospital was set up as near to the airfield as was prudent and sentries were posted to watch for the transport planes. When a transport plane was sighted coming in, patients were hastily sent out to the airfield. It was a slipshod arrangement compared to the highly efficient methods of air evacuation developed later in the war, but it worked and many patients were evacuated.

On 10 April, there was a heavy air raid on Taunggyi. No 4 Burma General Hospital had greater difficulty in getting away from there. It was difficult to get labour, motor transport and even rail transport. The railway drivers and guards had run away and it was difficult to move the train even when the rolling stock was found.

Thus half the hospitals were closed or were on the move, but the remaining hospitals and other medical units worked magnificently. 2 British Staging Section had 130 assorted patients, 4 CCS on the *Siam* nearly 500, 60 IGH nominally a VD hospital of 600 beds had nearly 700 patients of all sorts and 41 IGH had over 1,000 cases. In addition there were some convalescent depots in Maymyo. The Padre at Maymyo opened up a convalescent depot for other ranks. 8 Burma General Hospital nominally of 77 beds held on one occasion 284 British patients of whom 52 were officers.

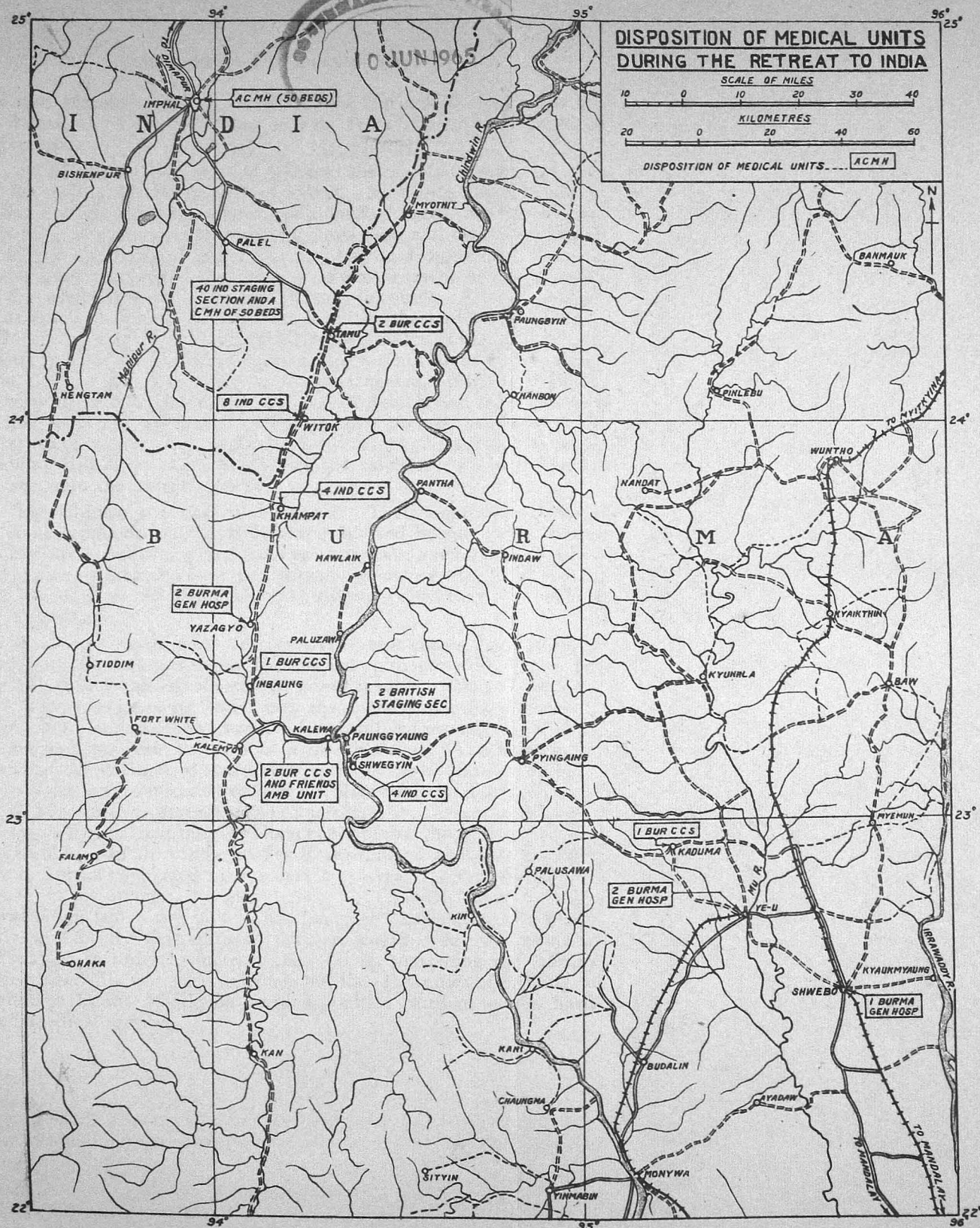
On 3 April, when the situation was most difficult, Mandalay, where the principal remaining hospitals were situated, was heavily bombed. There was no warning of this attack till the drone of many planes and the sudden sound of guns were heard followed by white puffs of smoke from the bursting shells. Then came the whistle of bombs falling all at the same time, a rising crescendo abruptly ending in the crash of the first burst. For perhaps half a minute there was no other sound than the roar of the salvo and then it was all over. The whole bazaar, the railway station and all the southern end of the town had been hit and from many sides came the thick black smoke of burning buildings. Damage and casualties were very heavy but worse was to follow. Fanned by a strong south wind the flames from a dozen fires swept through the wooden town. Hidden under a thick cloud of black smoke the city was a raging inferno of flames. It all happened very quickly, and many of the casualties were trapped and burned before help could reach them. Their charred bodies, crouched in hopeless attempt to find shelter from the roaring blast bore mute witness to the terrible toll of suffering exacted by modern war. The fire was too fierce to last and within a few hours had burnt itself out. The residential southern end of Mandalay had vanished completely leaving only groves of blackened trees standing in the thin blue haze of smoke. Such raids had been made before on other towns and were made repeatedly, but Mandalay had the worst. The population had grown careless for there was a

story that Mandalay the old capital of the Burmese kings with its fort and Palace, the Peacock Throne and the Pearl Throne, was safe from the Japanese.

In Mandalay the Medical Services did not fail despite the fact that the civil hospital was hit and gutted. No bombs had dropped on the fort nor on any area marked with the Red Cross, but sparks from the burning city flew over the moat 50 yards wide, and the wall behind it and fell on the roofs of No 5 Burma General Hospital. The wood shingles oiled year after year and now as dry as tinder burst into flame and the whole hospital was soon burning furiously. All the patients and as much equipment as could be saved by the staff were moved to the Governor's lodge in the fort. 60 IGH was situated in store buildings in the west quarter of the city and fortunately was not hit in the bombing. But as the fire spread the hospital was endangered. Such a possibility had been foreseen and an evacuation scheme which had been prepared was now put into operation. 600 patients with staff, equipment and tentage were moved into a place of safety north of the fort under Mandalay Hill in six and a half hours. In addition, two rescue parties were sent into the burning city.

The Chinese were not so fortunate. Their improvised hospital with some hundreds of patients in it was hit and burnt. No 2 Burma CCS had arrived that day and these two hospitals, having been deprived of their accommodation, were now ordered to move north. They carried on as best as they could in temporary quarters until they were able to leave Mandalay.

It now appeared that the immediate crisis caused by the movement of all hospitals was being overcome despite many difficulties, but the more distant outlook allowed no complacency. For one thing the withdrawing troops were forced into the sparsely populated north of Burma where large buildings suitable for hospitals were not to be found. The monsoon was due to break in a month's time. The incidence of malaria in the northern districts was intensely high. So far the army had been exposed to infection only in the Shan States and all troops had been withdrawn from that area two months earlier. It was also obvious to everyone by this time that the chances of holding the Japanese on any line were slim. In an Administrative Review, dated 19 April, the MGA Army in Burma concluded his remarks by saying "in fact the medical situation, in my opinion, is a gloomy one". The only hope lay in the air evacuation which was now in full swing at Shwebo, but the Burma army was informed that transport aircraft would in future operate up to Myitkyina in order to increase their lift by shortening the journey. The increased lift was very welcome but the difficulties of sending all casualties to distant Myitkyina were an added burden to the hard-pressed medical services.



CHAPTER XIV

The Retreat to India

After the capture of Toungoo on 25 March, the Japanese had advanced along the road to Mawchi, but their progress was slow. Early in April, the Japanese received considerable reinforcements through Rangoon, and with these they struck in strength against the weak scattered Chinese Sixth Army. A motorised column of the newly arrived 56th Division, 'The Red Dragon,' with tanks and guns drove through Toungoo up to Mawchi and thence into the Shan States. Between 16 and 19 April, while the Burma division was fighting in the Bawlake area where a Chinese Division was cut off and overrun. The Japanese column sped north and by the evening of 21 April it had reached Hopong and a part of the column turned west for Taunggyi. From there they threatened the left flank and rear of the Chinese armies, and allied lines of communication through Meiktila. On 23 and 24 April, after a fierce battle, the Chinese re-took Taunggyi and held the flank. The local danger was averted but the general situation became rapidly worse. The main Japanese column drove on north towards Lashio. A Chinese division was sent back from Mandalay. But the Japanese got to Lashio first, and on 29 April the only line of communication with China was cut off. The Japanese were now free to threaten the rear of the Allied forces through Bhamo and Myitkyina or to sweep down on Mandalay.

By the time the Japanese thrust in the Shan States reached Taunggyi, it was clear that there would be no counter offensive against Yenangyaung. The 17th Indian Division was ordered to withdraw from Taungdwingyi through Natmawk to a position near Meiktila, while the 1st Burma Division moved to Taungtha. Plans were made to hold a strong line forward of Meiktila with Allied troops. General Alexander considered that this was the last line that should be held south and east of the Irrawaddy. The Ava bridge, a few miles below Mandalay, was the only crossing place for tanks and was a dangerous bottle-neck. He could not afford to fight too close to it. But the situation changed almost before his plans were complete.

On 25 April, General Alexander learnt from General Stilwell that Chinese resistance on the Pyawbwe front was likely to collapse very soon. This would mean the end of the "strong line forward of Meiktila". The fall of Lashio, Bhamo and Myitkyina was only a matter of time. It was now quite impossible to stand upon the Mandalay-Irrawaddy line, and General Alexander decided that his main object must be the defence of India. On 26 April orders were issued for the withdrawal to Kalewa. Evacuation of troops and installations in Maymyo was to be carried out immediately while the Burcorps provided a rear guard on the axis Meiktila-Mandalay and covered the withdrawal of the much battered Chinese forces.

It was intended that the main body should fall back on Kalewa through Ye-U. From Ye-U a rough track, scarcely better than a bullock

cart route, wound for 120 miles through thick teak forest and over almost uninhabited hills. Twenty miles of the track were without water. Work had been put in hand to make it fit for motor transport but very little had been done. This track ended at Shwegyin on the bank of the Chindwin, six miles below Kalewa. Linking these two places were a number of Chindwin river steamers of the Irrawaddy Flotilla Company, shallow draught stern-wheelers, which were to ferry the entire Burma army across the Chindwin. At Kalewa began the projected road to India, which, although a great deal of work had been done on alignment embankments and culverts, was quite unfinished. Unmetalled and unsurfaced, it could not last a week in the monsoon.

Arrangements were made for stocking the track from Ye-U to Kalewa with provisions, water and petrol. It was estimated that this build up would take seven days but it was doubtful if the rear-guard could hold up the Japanese so long. Administrative arrangements were, therefore, rushed on with the utmost possible urgency. All the services rose to the occasion magnificently. Fortunately supplies were sufficient; they had been accumulated in the Shwebo-Ye-U area by the foresight of the "Q" Staff. Dumps of rations and petrol were established at each of the eight staging posts. The sappers, with great individual initiative, dug wells and produced water, of a sort, even in waterless jungle. Transport was the principal difficulty and this was produced by milking every possible source, including the fighting formations. A drastic reduction of kit had to be made and every bit of baggage and equipment not having immediate fighting value was jettisoned.

The plan was to withdraw the whole force up the north-western route to India. It was obvious that all hospitals from Maymyo must be cleared, and cleared quickly, of the 1,600 patients that they held. The hospitals in Mandalay were already moving. No 1 Burma General Hospital at Shwebo and No 6 Burma General Hospital at Sagaing were full. No 2 Burma General Hospital and No 2 Burma CCS were at Monywa. No 4 Burma General Hospital was receiving train loads of patients in Myitkyina. The hospital ships were crowded with patients. Nine hundred additional patients were said to be on the way up the river. One of the ambulance trains was away up in Shwebo, the other was derailed near Meiktila. The Chinese had 2,000 patients with nothing to move them and nowhere to send them. The situation appeared desperate.

The DDMS took control of the evacuation himself and sent off patients to Monywa, to Myitkyina and to Shwebo by any train available. With them went advance parties of Nos 3, 7 and 8 Burma General Hospitals, and 41 IGH to Mohnyin and Katha. The ADMS, L of C, was sent to Myitkyina to supervise medical arrangements in the north. His train was derailed by sabotage, but he got there ultimately. The ambulance train at Meiktila was got back on the line and the other from Shwebo was hastily recalled. Thereafter both trains ran from Maymyo to Shwebo clearing patients as quickly as they could. No 60 IGH in Mandalay was loaded on to river flats with its remaining patients, and sent by river to Khaukmyung, seventeen miles east of Shwebo, where it continued to function partly on flats and partly in tawmaw huts. Many

patients from Maymyo had gone and the hospitals that remained were ready to move.

The situation was once more under control, but the last two days were very uncertain. One train with some 500 patients and the personnel and kit of another hospital was sent away but still many serious cases remained. No one could say when another train might come. No 2 Ambulance Train arrived and saved the situation. Five coaches were added to it, 438 patients, 73 nursing staff, the essential equipment and personnel of No 2 General Hospital, the District Laboratory, the Dental Centre and a party of RAMC orderlies boarded the train. The train, however, became too heavy for the engine to pull, and had to be split into two parts. Both parts left Maymyo but stopped at the next station down the line, where the engine drivers left the train. The medical officer commanding the train had to go to Mandalay and get two volunteers to take it on. Eventually it took five days for a 24 hour journey to Shwebo but it got there in the end and all the patients and nurses were evacuated by air to India. In Maymyo, there were still about 50 patients left and these, together with the last 200 medical personnel, were put on a mixed convoy of all the ambulance cars and lorries that the DDMS could lay hands on and sent by road to Shwebo.

Meanwhile, at Mandalay all units had moved or were moving across the river. At Sagaing 6 Burma General Hospital could evacuate all 600 patients by train and steamer. By great efforts at the last moment they succeeded in loading all their equipment and tentage. While this was going on there was a heavy bombing raid on Ywataung station a short distance away which was now the nodal point for all rail traffic, but fortunately casualties were light.

After Maymyo was cleared, the DDMS established his headquarters at Shwebo. From then on owing to the difficulty of communication he could only control those units which were immediately about him. The northern area was entirely cut off and there the ADMS, L of C, was responsible for medical arrangements. No 1 Burma General Hospital had only some 200 patients left and a few were still getting away by air. Two raids, each by large formations of Japanese planes, blew up and burnt the whole town. The civil hospital was deserted, and from it the army rescued a number of patients left unattended.

The general plan for the final evacuation was to hold patients in all medical units at all stages along the route, each evacuating to the unit behind it. The most forward unit as soon as it emptied was to close and fall back to the rear and then open again. In order to find units for the stages the two CCSs were given orders to make themselves mobile, by buying bullock carts or by any other means. All remaining hospital ships were formed into a flotilla. This flotilla was taken to Katha, where the ships were sunk. The patients were sent on to Myitkyina by train to be evacuated by air, while the medical personnel marched out.

The OC of the BHC Depot at Sagaing managed to get all the families away by ship with the last convoy to Katha. Then using one lorry to carry rations he marched his 250 men from Sagaing to Tamu, a distance of 270 miles. In spite of an injured leg his assistant continued

the march and brought the whole unit safely through to the reception camps in the Imphal area.

The RAMC Depot at Maymyo also came out as a complete unit bringing with it all the accounts, cash and records of the RAMC in Burma. They had salvaged and repaired sufficient lorries in Maymyo to move complete to Shwebo. From there they went by train to Naba and thence marched out to Tamu.

The retreat was now well advanced. The principal route was the track from Shwebo to Kalewa with subsidiary routes to the north and the south. The northern routes branched off along the railway running up to Myitkyina. This route ran from Wuntho, Naba, Hopin and lastly Moguang through the long difficult Hukawng valley to Ledo in Assam. Along this northern axis had been sent Nos 3, 7 and 8 Burma General Hospitals and Nos 59 and 60 Indian General Hospitals, some by river, some by rail. With the departure of the last convoy from Katha the route was closed for the railway, north of Shwebo, as it was blocked by wrecked trains. The northern route was only used because air evacuation was being carried out from Myitkyina to Assam. Nearly all the patients and very many helpers and refugees were evacuated by air from there. For the staff of the hospitals and for thousands of refugees who could not be carried by air the northern routes were long and difficult.

By contrast the other subsidiary route, south of the main axis was easy, for it was by paddle steamer up the Chindwin to Kalewa and thence by the Tamu Road. Unfortunately, there were only a few of the shallow draught sternwheelers which had been specially built with powerful engines to navigate this shallow swift river, and so the capacity of the route was limited.

No 2 Burma General Hospital had moved to Monywa on 17 April and opened a hospital in the Wesleyan school there. From here it was intended that the hospital should retire up the river Chindwin in due course carrying the patients on a hospital ship. This proved impossible and, on 28 April, they were ordered to go up to Ye-U by train with all their patients. Before they left Monywa there was an air raid on the station when their train, and another beside it full of mortar bombs, was hit. The CO and a party of volunteers uncoupled and pushed away two blazing coaches from the hospital train and then retired to safety till the mortar bombs in the other train stopped exploding. No one was hurt in this hazardous adventure and the hospital train was saved. Next morning, they got away and reached Ye-U in safety with all their patients. All these casualties had to be carried along the road to Kalewa together with those which came in later from the battle at Monywa and from the bombing of Shwebo, and of Kinu, north of Shwebo. Next the Burma Corps and Burma Division came in from Monywa and commenced retiring up the line. The 17th Indian Division and the Armoured Brigade were acting as rear-guard, moving north from Sagaing by road.

For a large and fully mechanised force, the 120 miles of winding track from Ye-U seemed impossible. But it had to be used. The

monsoon was due to break. The race to Shwegyin was both against the Japanese and monsoon. Innumerable dry stream beds of loose sand, a waterless stretch of jungle, a tortuous hill section and many frail bridges were some of the obstacles.

Meanwhile, the hospitals which had gone north met with varying fortune.¹ At Myitkyina a holding hospital was established and to it all patients were sent and evacuated by air. There were RAF Dakotas making trips from Dinjan in Assam. In addition, there were a number of civil aircrafts belonging to the Indian National Airways and the GNAC, the China Air Line. These planes, crowded with fantastic number of passengers worked ceaselessly in a wonderful sustained effort. They cleared a vast number of people, mostly patients, women and children. On 4 May, 3 Burma General Hospital at Mohnyin set out from Hopin, and marched with pack bullock transport past the Indawgyi Lake through the jungle to the river, a distance of 85 miles, which they reached on 9 May. On 15 May, they reached the Chindwin and two days later started marching from Tonhe on the last lap of the journey to Imphal, a difficult march for here they were back on a refugee route, the rain had started, the track was muddy and the camp sites foul. On 23 May the whole party reached Imphal. They had carried out a well planned and well disciplined march. Other units did the same from Katha where the hospital river steamers were scuttled. One party included two young nursing sisters who had worked on the ships till the last and came through the jungle to Tamu without turning a hair. The principal advantage of these routes was that they were little used and to a well organised party the empty jungle had few terrors. On the most northerly route, through the Hukawng, the case was very different. Not only was this route intrinsically difficult but it was grossly overcrowded and consequently abounding in disease and disorder. Along this route travelled the personnel of 60 IGH. They left Magaung at four in the afternoon on 4 May. For the first 48 miles they travelled by lorry, then by marches to Shingbwiayang accompanied by bullock cart transport. Beyond Shinbwiayang there was no road, no food and no transport for six marches. Drenched by rain, they struggled along the slippery track at places knee deep in mud. At night, after a scanty meal of rice and salt, they made what shelter they could in the wet jungle and tried to sleep till day came and they could march again. The war diary of 60 IGH calls this march "a story of Hell on earth"

¹ At this stage on 1 May, 1 Ambulance Train had been derailed 17 miles south of Shwebo. The line had been sabotaged to stop a Chinese troop train but the ambulance train hit the break first. The railway was completely disorganised and there was no possibility of sending a relief train down to rescue them. The Japanese were known to be following up and things looked grim. The DADMS, L of C, was sent off in a jeep to bring the occupants of the train if he could. Putting the jeep on the line with the rear wheels on the left rail and off wheels bouncing along the sleepers he drove on down the railway line till he came to the train. The smash had not been severe and no one was hurt but the train was wrecked and to make matters worse they had been attacked by dacoits, with whom a Keren nurse in the party had parleyed and managed to make peace. The patients and staff marched up the line to the station at dawn. The DADMS with four sisters and one seriously wounded Chinese officer, the only case who could not march, travelled in the jeep and after an adventurous and difficult journey reached Shwebo. There, after rather a desperate search, two lorries were obtained, and sent down the road to the railway station in charge of a very reliable young Indian officer. In spite of his vigilance one lorry disappeared, but making two trips with the other one all the remaining patients and staff of the ambulance trains were evacuated.

blistered and sodden feet. legs full of leech bites, discipline very bad ran short of rations after four days for some did not carry enough, others threw them away. up and down 4,000 to 5,000 ft. high. had to march with a temperature of 101° for two days". On 17 May late at night some of the party arrived a Nampong where rations, medicine and food were available. A few days later the whole party reached Margharita in Assam. They had come through, but it had been a terrible journey, and some who reached India died later from its effects. Many never reached India.

Broken transport littered the route, but it was kept open by excellent administrative work, strict road discipline, and the efforts of the engineers. At every stage were stocks of petrol, rations and water. Many women and children rode in vehicles, whilst troops made forced marches. The deep forest gave concealment from aerial observation.

Near the Chindwin a gorge led to the Shwegyin Basin, a flat pear-shaped depression overlooked by escarped jungle-clad hills. Traversing the basin the track passed through a gap to the river at the point where the Shwegyin Chaung joined it. At an improvised jetty, staff officers, officers of the Irrawaddy Flotilla Company and Royal Marines toiled manfully at the slow work of loading vehicles and animals, but in the basin and further inland, at Mutaik, transport and stores accumulated rapidly. Japanese aircraft soon located the activity at Shwegyin, and their attacks caused the crew of several steamers to stop work in daylight.

The airfield at Myitkyina continued to be the scene of ceaseless activity. The transport planes strove to clear hundreds of casualties and thousands of refugees. The situation became difficult by the first week of May. By 5 May, Colonel B. R. Tandon had evacuated all his patients and about 3/4th of his staff by air to India. No. 6 Burma General Hospital was, however, still on its way to Myitkyina. The hospital arrived on the morning of 6 May with sixty patients including about six stretcher cases. The patients were evacuated by the OC, 4 Burma General Hospital straight from the station to the aerodrome. The first plane was loaded at about 0900 hours. When it was taxiing away and the second plane was being loaded, Japanese planes appeared and fired at them. A few casualties caused amongst the patients were removed to the civil hospital. As the transportation of these casualties was in progress a group of Japanese planes reappeared and heavily bombed the airfield.

After the second attack, two planes arrived in the evening but only one landed. The walking cases rushed into it. Before the stretcher cases could be put in, the plane had left the ground. This was the last plane seen in the airfield. The air evacuation thus came to an end.

On the night of 6/7 May at about 0100 hours, Colonel Tandon with his remaining men, with a blanket each on their backs, set off on foot. Thirteen patients too sick to march were left at civil hospital Myitkyina. On the 26th milestone it was learnt that the party which had all the food had gone ahead. This party was contacted with difficulty at milestone 56. Most of the rations that the party had brought

had been looted but there was enough left for two to three days. The ambulance and the car were utilised to bring the remainder of the party in two shifts to milestone 70. Next day the party reached MS 101 on the Sumprabum route from where the way led into jungles and hills.

After this they marched on through jungle and hilly track and were often without food and shelter. If anybody strayed off the path he was caught by the booby traps. Later the journey was through slush and mud with dead bodies strewn all along the path. The column marched through jungle covered hills 4,000-8,000 feet in height infested with leeches, crossed deep and fast running streams in improvised bamboo boats or along ropeways which often broke down, and lived on jungle banana pulp and boiled grass. Surroundings were dark and dismal. The track as it wound round the hills was churned into a morass of mud by the thousands that had passed along it. Night and day the monsoon rain soaked the luckless travellers. Hungry and completely run down in physique with only a shirt and short and a blanket they persevered through till they reached the farthest point of the tea gardeners mission. From this point onwards, the nurses and the sick got either horse or 'dandee' transport and the rest moved on foot.

Despite the most difficult and desperate situations, the medical services carried and evacuated from Burma, after the closure of Rangoon, approximately 6,006 sick and wounded. Except some thirteen cases which were left in Myitkyina, no wounded or sick man who came into the care of the medical services was left behind. The medical services, however, paid heavily for this gallant effort as casualties among them were exceedingly heavy.

CHAPTER XV

The Rear-guard

While the evacuation of the hospitals and all the other administrative units of the Army was in progress, the 17th Indian Division, the rear-guard, was still in contact with the Japanese. On 25, 26 and 27 April, the armoured brigade and supporting infantry, operating round Meiktila, engaged the advance of Japanese troops. On the first two days motorised columns were shot up with great success, and on the third day Japanese tanks were engaged. Whilst these actions were proceeding the Gurkha Brigade had taken up a rear-guard position round Kyaukse. This was to be held to protect both the Chinese withdrawal on Mandalay and final crossing of the Ava bridge by the 17th Indian Division. The Gurkha Brigade was a tired formation now, no more than 1,700 strong, but its morale was high. With the brigade were the 7th Hussars, a company of the West Yorkshire Regiment, some guns and a demolition party of the Bengal Sappers and Miners. The 17th Indian Division covered the southern approaches to the town in a wide arc. It was rapidly prepared for the coming action. Anti-tank guns and mortars covered a block across the main road and fields of fire were cleared.

Throughout 28 April, the 17th Indian Division tanks and forward patrols were in contact with the Japanese 18th Division, a crack formation from Malaya. By the evening the Japanese had reached main positions astride the road held by the 17th Indian Division. The first attack developed at 2200 hours in bright moonlight but was beaten off. The Japanese vehicles then sought to cross the river by a diversion to the east, but the guns and mortars of the Indian division frustrated this movement. Two further night attacks were launched against the 7th Gurkha. Each was repulsed at close range with heavy loss. At dawn on 29 April, the Indian patrols and tanks cleared the front and flanks. Then, with artillery and mortar support, the 7th Gurkha brilliantly assaulted a village in front of their forward defence lines. Over one hundred Japanese were killed, Gurkha casualties being three. Throughout the day the Japanese guns were active but ineffective. In the afternoon another infantry attack was attempted only to be broken up by machine-gun fire. Aircraft now took up the battle. The Burma Corps troops were dive-bombed, but sustained no damage. At 1800 hours on 29 April withdrawal was effected precisely as planned. Protected by tanks the infantry retired. Two road bridges across the river were blown. The railway bridge had already been destroyed. Contact was broken without interference from the Japanese. Total losses of the 17th Indian Division were ten killed and wounded. It was a model rear-guard action, the operation was well planned, gallantly fought, and perfectly terminated. The line of evacuation of casualties was from ADS 37 Indian Field Ambulance (48th Brigade) from Kyaukse through MDS 37 Indian Field Ambulance at Myinge to Light MDS 37 Indian Field Ambulance, Shwebo. Light MDS 50 Indian Field Ambulance acted as a staging section at Ondaw, 22 MAS was located at Sadaung.

On 30 April, the last of the 17th Indian Division troops crossed the Ava bridge. At 2359 hours on the same night the bridge was destroyed. Shortly afterwards, the Chinese were forced out of Mandalay.

By the same day, Light MDS 50 Indian Field Ambulance at Ondaw was closed and was replaced by 23 Indian Field Ambulance and 37 Indian Field Ambulance moved to Shwebo.

Abruptly the centre of interest shifted to Monywa, the key to the Chindwin. From here part of the Burma Corps intended to withdraw on steamers towards Kalewa and the remaining troops were to fall back along the track from Ye-U. For the moment, Monywa was almost unprotected. The 2nd Burma Brigade of the 1st Burma Division that had been west of the river Irrawaddy had moved from Pakokku along the track to Gangaw and Kalembo. The other two brigades marching from Sameikkon were not yet within striking distance of Monywa. Divisional Headquarters was at Ma-U, four miles south-east of the town.

Suddenly, on the evening of 30 April, a Japanese column from Pakokku appeared west of the river opposite Monywa. The Japanese had accurate information of the movements and dispositions of Allied troops. Early next morning a party of Japanese and Burmese overran the Headquarters of the Burma Division. After a stout fight, General Bruce Scott and his staff made their escape. Shortly afterwards the Japanese crossed in strength to Monywa in their own powercraft. A force of a few Royal Marines, Gloucesters, and Burma Frontier Force opposed them and then fell back northwards to protect the road to Ye-U. The Indian troops between the Ava bridge and Monywa were in an unenviable position. The armoured brigade hurried south from Ye-U, and the 63rd Brigade of the 17th Indian Division entrained near the Ava bridge for the Monywa area. By the afternoon of 1 May, it was in action round Ma-U where it was later joined by two brigades (13th Brigade and 1st Burma Brigade) of the Burma Division.

Meanwhile, Monywa had been attacked by two brigades, one continuing the advance from Ma-U up the east bank of the Chindwin, the other carrying out a night march to the north-east to attack towards the river astride the road from Zalok village. Monywa, surrounded by an expanse of flat paddy land, was easily defended. From buildings and other vantage points the Japanese resisted stubbornly. While the action was going on, the troops carried out a circuitous cross-country march to the Ye-U road north of the town, and by mid-afternoon it was clear of the battle area.

There were then about 120 wounded in the main dressing station of 23 Indian Field Ambulance. With transport borrowed from 13 Light Field Ambulance and from the 17th Indian Division Transport Company, they were able to carry them all to Ye-U. Meanwhile, 37 Indian Field Ambulance had moved to Ye-U, and was rapidly filled with casualties from both the 17th Indian Division and Burdiv and their evacuation caused great anxiety as no transport was available. Any transport that could be collected was being sent south to clear the casualties from the Monywa action. The Chindwin river route to Kalewa was now closed. The sole line of withdrawal was the track from

Ye-U to Shwegyin. The force round Monywa fell back towards Ye-U. At first the Japanese followed up this movement. There was some fighting, but the Japanese did not advance far. No. 2 Burma Field Ambulance retreating with these forces made a gruelling night march; most of their patients and equipment were carried on bullock carts. Their men were so tired that it was with difficulty that they could be kept on their feet on the ground and march.

On the afternoon of 3 May, 23 Indian Field Ambulance was ordered to move to Pyingaing with a convoy of 150 casualties from 37 Indian Field Ambulance. On their way they passed 2 British Staging Section, 14 miles from Ye-U, and found that it had far more patients than the section could deal with. The officer commanding of 23 Indian Field Ambulance lent him an officer and some men to help him with his task and made arrangements for regular evacuation as far as possible. Many of the medical units functioning as staging posts along the road moved onwards towards Kalewa.

On 4 May in the afternoon, 23 Indian Field Ambulance arrived at Pyingaing and took over from No 1 Burma CCS but the site was most unsuitable. Stinking corpses of animals were lying about unburied and had to be cleared before the casualties accompanying the field ambulance were unloaded and attended to. Many were seriously ill and others continued to arrive throughout the afternoon. The personnel worked hard throughout the night and the site was cleaned. The field ambulance settled down to attend to their casualties. On the following day they moved into a suitable site in a Pyongi Chaung (a group of temples).

On 5 and 6 May, 37 Indian Field Ambulance moved by MT from Ye-U through Pyingaing to Shwegying taking a large number of casualties and, on the morning of 7 May, it established light ADSs at Shwegyin and on the jetty at Kalewa. That afternoon the remaining casualties in 23 Indian Field Ambulance at Pyingaing were evacuated in ambulance cars and lorries to Kalewa.

In general, casualties evacuated in lorries lying on a thick bed of straw arrived in better condition than those who travelled in ambulance cars. Lorries were steadier than the lighter ambulance cars along this rough unsurfaced track where clouds of dust were thrown up behind every vehicle. Ambulances got their own dust into the back and became quite unbearable inside, while patients in open lorries were in comparatively fresh air.

The division was now faced with the problem of crossing the Chindwin. A number of steamers were ferrying troops and vehicles between Shwegying and Kalewa some eight miles upstream on the far bank. But on account of constant air attacks these ferries were working only at night. At the ferry there was a small movement control staff arranging the loading and despatch of men and vehicles. There was only room for a few vehicles on board the ferry. Only four wheeled lorries and jeeps were allowed to go across. Exception was made for ambulance cars but only very few got across.

On 8 May, the MDS of 37 Indian Field Ambulance took over from 1 Burma Field Ambulance at Kalewa, and 23 Indian Field Ambulance arrived at Shwegyin on the same evening. Next day the latter crossed the ferry to Kalewa, leaving only a light ADS at Shwegyin and took over from 37 Indian Field Ambulance. The latter was ordered to proceed to Inbaung. During this time two brigades with a small amount of transport had got across, but the main part of the transport including the whole of the armoured brigade, was still in Shwegyin when the Japanese attacked.

Unknown to the rear-guard, on the evening of 9 May a considerable Japanese force with animals and guns was put ashore from fast landing craft, eight miles below Shwegyin. The vessels, one of them flying the Burmese flag, then sped away for reinforcements. Taking a circuitous route through Thanbaya the Japanese marched for Shwegyin. The surprise attack down the defile of the Shwegyin Chaung was launched at dawn on 10 May. The ADS 23 Indian Field Ambulance, which was in the 48th Indian Brigade area, came under fire. The casualties and equipment were loaded and the ADS was moved into the neighbourhood of the ferry.

Tanks and infantry from Mutaik hurried forward just in time to prevent the Japanese blocking the track north of the basin. Thereafter piquets held the track against parties of the Japanese, and the guns at Mutaik came into action. Clinging tenaciously to a knoll the Japanese had direct observation for their mortar fire on the basin and jetty. Mortar fire and fierce fighting continued in the jungle. Although the jetty could not be fully used, officers of the Irrawaddy Flotilla Company kept some steamers working. Casualties were embarked at the foot of a steep cliff higher up the river. It was evident that there could be no loading that night of vehicles and stores at the jetty. To withdraw north along a hazardous path, traversing razorbacked ridges to Kaing opposite Kalewa, all vehicles, tanks, guns and much equipment had to be sacrificed. The remaining wounded with non-essential elements were at once sent along a narrow hazardous path to Kaing opposite Kalewa.

At 1700 hours, guns and mortars began wasting down ammunition and at 2005 hours they opened a final barrage on the hills round the jetty and Basin. So difficult was the path that several hours elapsed before the tail of the column was clear of the gorge near the basin. A few mules were lost; some slipped down sheer escarpments, others blocking the column had to be pushed from the path. The Japanese made no attempt to renew the action. Even before that final barrage nearly 200 of their dead had been counted in the jungle. Originally it had been the intention to hold Kalewa and use it as a bridgehead from which to fight the way back into Burma but, since the road to Tamu was unfinished, it was not yet possible to maintain a force there during the monsoon, so the withdrawal continued. Nearly all that transport was now burning in Shwegyin basin. All the troops marched carrying what they themselves could. It was a weary, thirsty, dirty business and men were weakened by dysentery and the road was indescribably

dirty. But the army held together as it had done throughout the campaign.

As conditions became worse so the work of the medical services increased. The chain of medical units was extended up the road to Tamu. Stages were set out usually at an interval of about 15 to 20 miles, and by using CCSs a considerable degree of real treatment, operative and medical, within the limits of the equipment available was made possible. It had been presumed that India would make all arrangements from Tamu onwards. The DDMS had, therefore, gone up to see the arrangements but, finding none, had to continue the chain of Burma Army medical units onwards to Imphal.

The field ambulances of the 17th Indian Division bringing up the rear strated to relieve these medical units, and one by one they fell back. On 11 May, 37 Indian Field Ambulance took over from 1 Burma CCS, at Inbaung, where during the day they admitted 108 patients including pregnant refugee women who were successfully delivered. On 13 May, after admitting and evacuating another 139 casualties, they moved on to Khampat and relieved 4 CCS. Here they stayed for 24 hours, admitted, treated and evacuated 85 cases and then moved on to Tamu. In Tamu they relieved 2 CCS and opened a MDS where they treated and evacuated over 80 serious cases besides several hundred minor sick before they left for Lokchao.¹

On 12 May, the final withdrawal from Kalewa began and the ADMS collected enough transport to move all the casualties in 23 Indian Field Ambulance while one company marched. Early on the following morning this transport had not returned and the 63rd Indian Infantry Brigade, acting rear-guard to the division, had started to move. The ADMS ordered the last company to march, abandoning some equipment but carrying two patients found in a broken down ambulance by the roadside. Meeting some returning lorries they sent one back for their equipment but it had, in a matter of an hour or so been completely looted. 23 Indian Field Ambulance went first to Inbaung and then on to Yazagyo where they took over from 2 Burma General Hospital, stayed two days, moved again to Winnet, and then joined 37 Indian Field Ambulance at Lokchao on 17 May. There they settled down to the usual routine of clearing up a site, admitting patients and treating them, getting transport and evacuating them. The valley of Lokchao was a singularly unprepossessing place, steep, rocky, covered with scrubby bamboo, devoid of comfort and in normal times untrodden by man. Through Lokchao in the last few weeks had passed many thousands

¹ No 1 Burma CCS carrying their equipment in one ambulance car marched 27 miles from Kalewa to Inbaung, arrived there in the evening and had 50 patients one hour later. That night they did five major operations and by next morning had settled down to a routine disposal of 150 to 200 casualties a day.

No 2 Burma CCS, set off from Kalewa to go up to Tamu. Like other units they had lost all the transport they had in Shwegyin. Necessary equipment was distributed among the personnel. The surgical equipment was carried in a canvas bag slung on a bamboo pole between the Officer Commanding the CCS and his Second-in-Command. With this equipment they functioned at Tamu for ten days before they moved on into Manipur. This unit had 2,300 sick and wounded entered in its admission and discharge books during the ten days that it functioned there.

of refugees for here was the only bridge across the river. It seemed that all had stopped there, most for a brief period, some to die amidst the thin bamboos.

On the first day it was fine and the troops were glad of respite, bathed and washed their clothes in the rocky stream below. But that night the monsoon broke and it rained heavily. All knew that once the monsoon set in, the newly cut mountain track ahead of them would become impassable for vehicles. Next morning it had cleared a little and warning orders to move were received at 1000 hours but no transport arrived and soon it started to rain again making the road once more unfit for traffic; hence the move was postponed. It was a miserable day and the ground and the water supply continued to be fouled by scores of refugees. There was very little shelter for patients and none for the staff. A few tents for the most seriously sick were made from some parachutes which were dropped with medical supplies for the refugees. A small number of cases were evacuated in jeeps.

All day the drizzling rain continued and during the night there was again heavy rain but the morning of 20 May was clear. Although the road was not fit for lorries, the unit started to march to Palel leaving a skeleton staff with one 3-ton lorry containing all the technical equipment and a couple of ambulances to follow as soon as the road surface was dry enough.

On 22 May, the last party of both field ambulances left Lokchao with the rear-guard of the 2nd Burma Brigade. The remaining patients were carried along with the unit. It had rained incessantly for some days, the road was in bad condition and progress was terribly slow. Some patients were evacuated on top of the bridging equipment which had been used at Lokchao. The following day the marching party was picked up by transport from India and was carried into Palel accompanying the last detachment of the Burma Army. The date was 23 May and monsoon had broken. The campaign was over.

The troops had been exposed to conditions of severe hardships for a long period without respite. During the withdrawal from Kalewa through the infected area of Tamu 50 per cent of the 17th Division troops were struck with malaria. The majority were suffering from diarrhoea, and skin sores were extremely common. During the first few days in Imphal a large number of patients were admitted to 8 Indian CCS. With a daily sick rate reaching 1,000 patients, the CCS was unable to retain all the sick and was forced to evacuate at the rate of four hundred sick or over daily to Dimapur. Unit medical officers were instructed to treat as far as possible their own sick. Accommodation was set aside in each room by unit commanders. ADSs were sited in each brigade. 37 Indian Field Ambulance opened to receive sick officers and IORs and 23 Indian Field Ambulance to receive BORs.

CHAPTER XVI

The First Arakan Campaign

TOPOGRAPHY

Arakan is mainly a land of steep hills covered with jungle while the coastal area is studded with paddy fields, scrub and swamp. Roughly, it can be divided into four sectors:—

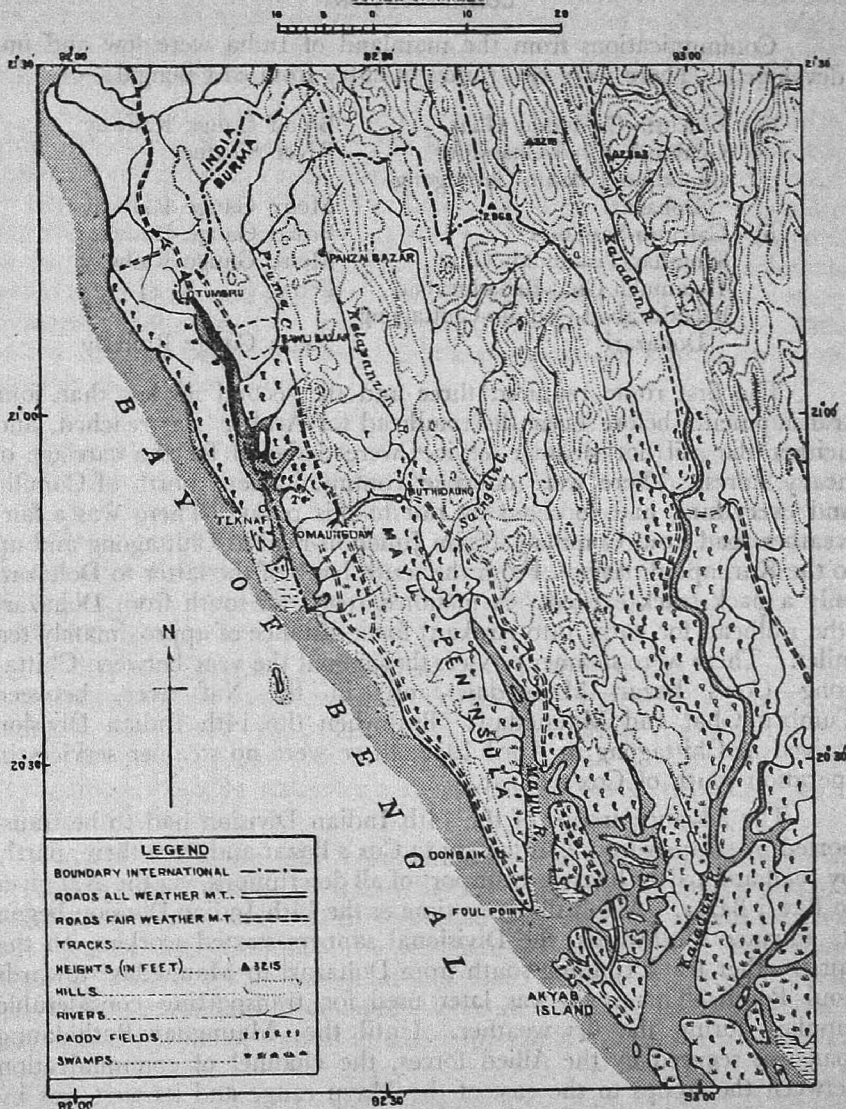
- (i) The Coastal Sector,
- (ii) The Mayu Range with foothills on either side,
- (iii) The flat country between the Mayu Range and the mountains east of the Mayu river (Mayu Peninsula), and
- (iv) The Kaladan Valley.

Akyab was the only harbour on the coast. The coastal strip, up to two miles wide in the northern part of the Mayu peninsula, narrowed to a few hundred yards in the south between Donbaik and Foul Point, and was interspersed by innumerable creeks. Several portions of the coastal strip were covered with scrub jungle and swamp. Low lying foothills joined the coastal strip with the 1,500 foot spine of the Mayu range which divided the Mayu peninsula. The rocky, jungle-covered Mayu range was a formidable barrier to movement from one side to the other. The main ridge and the foothills flanking it were, at most places, covered with dense jungle. The Maungdaw-Buthidaung road, which passed through tunnels at two places, was the main link between the east and west of this range. In addition, there were five mule tracks over the range of which three were fair weather tracks. The Ngakyedauk Pass which, during the first Arakan campaign, was barely fit for mules, was converted into a motorable track by the efforts of the engineers of the 7th Indian Division about the end of 1943. The flat country on either side of the Mayu river (known north of Buthidaung as the Kalapanzin) was intersected by a number of tidal creeks. During the rainy season, from May to September, the area used to become one vast expanse of water covering the paddy fields. In dry weather these paddy fields were covered with big lumps of dry mud which greatly hampered movement of troops. The mountain ranges east of the Mayu river were difficult to scale because of the steepness of ascent and the rocky structure covered with thick jungle. The Indian troops, who had to make their way through these jungles, were faced with a difficult task. These mountains almost completely segregated the Kaladan valley from the rest of Arakan and hence the Kaladan river was the main artery of communication between the port of Akyab and villages in the upper and lower Kaladan valley.

CLIMATE

The heavy monsoon from May to September reduced the campaigning season in Arakan to the few dry months of November to April. During the monsoon, as much as 27 inches of rain was recorded in one

SCALE OF MILES



week. On the ground, the country was hardly better than sodden jungle, with bridges swept away, and swollen streams or "chaungs"—as they were called—hindering movement at every turn. In May, the monsoon broke in its full intensity, rendering anything but patrolling impossible. During and just after the monsoon, malaria was rife, added to which leeches and ticks made life a misery for the troops living in the field.

COMMUNICATIONS

Communications from the mainland of India were few and undeveloped. There were two routes of entry from east Bengal:—

- | | | |
|------|---|---------------------|
| (i) | Calcutta-Goalundo Ghat | Broad Gauge Railway |
| | Goalundo Ghat-Chandpur | River Steamer |
| | Chandpur-Laksam-Chittagong-Dohazari | |
| | | Metre Gauge Railway |
| (ii) | Calcutta-Santahar | Broad Gauge Railway |
| | Santahar-Tistamukh Ghat | Metre Gauge Railway |
| | Tistamukh Ghat-Bahadurabad | Ferry |
| | Bahadurabad-Comilla-Chittagong-Dohazari | |
| | | Metre Gauge Railway |

The first route required three and the second no less than four transshipments before even the roadhead for Arakan was reached, and neither the rail nor steamer services were designed for the carriage of heavy stores. There were no road communications north of Comilla and everything had to come by rail to this point. There was a fair-weather road from Comilla-Laksam Junction-Feni to Chittagong and up to the Karnaphuli river. From the south bank of the latter to Dohazari only a pack track existed. A metalled road ran south from Dohazari (the railhead for entry into Arakan) for a distance of approximately ten miles. There were steamer services throughout the year between Chittagong—Cox's Bazar—Maungdaw and, in the Naf river, between Tumbru Ghat and Maungdaw. But when the 14th Indian Division arrived in Chittagong in April 1942, there were no steamer services in operation south of Cox's Bazar.

The advance troops of the 14th Indian Division had to be transported by steamer from Chittagong to Cox's Bazar and from there, partly by road and partly by river transport of all descriptions, via the Naf river to Bawli Bazar. About the same time as the 14th Indian Division began its advance southwards, the Divisional sappers started working on the fair-weather track running south from Dohazari to Maungdaw towards Foul Point. This road was later used for transporting considerable supplies during the dry-weather. Until the Maungdaw-Buthidaung road was secured by the Allied forces, the channel of communication between the troops to the east of the Mayu range and its west was by steep mule track over the Goppe Pass (1,600 ft.) which linked Bawli Bazar on the west with Goppe Bazar on the east. The Mayu river was the main line of communication for troops operating east of the Mayu range. There was also a track between Buthidaung and Rathedaung which was used when weather permitted.

One of the main reasons why only a small force of two brigades

was moved initially into Arakan was the difficulty of communications, which had a bearing on the future course of operations.

PREVALENT DISEASES

Malaria was by far the commonest disease in Arakan, as in Burma as a whole. Reliable figures of the incidence of this disease are not available as in many districts in which incidence of malaria was high, hospital facilities were meagre or non-existent. Plague, dengue, typhus, leishmaniasis, filariasis and rabies also occurred in civilian population.

At the end of February 1942, it was decided to send the 14th Indian Division from Ranchi area in Bihar to Eastern Bengal, to stop the Japanese on the line of Fenny river and to prevent a landing on the coast up the Meghna river. The 14th Indian Division had been originally raised and trained as a mechanised force for desert and mountain warfare. By the time it had to move into Bengal, all its three brigades (including two of three Divisional field ambulances) had been detailed to join other divisions. However, two new brigades, namely the 47th and 49th Indian Infantry Brigades and one field ambulance were sent to Bengal to join the 14th Indian Division.

The Divisional Headquarters was first located at Comilla and later at Mynamati, five miles west of Comilla. The 47th Indian Infantry Brigade was made responsible for the Fenny area and the 49th Indian Infantry Brigade for the Noakhali-Laksam-Chandpur area (each of these three areas was to be prepared for all round defence and to withstand a siege of thirty days in the event of investment by the Japanese). Chittagong area was to be evacuated if attacked in force and when the Royal Air Force no longer required it.

The areas occupied consisted almost entirely of paddy fields and none was suitable for jungle training. All the areas were totally submerged during the monsoon. All defences and communicating tracks and roads had to be built. There was thus little opportunity for training. But they gained valuable experience in manning boats, swimming and building shelters etc.

In May 1942, the 49th Indian Infantry Brigade was sent to Imphal leaving the 14th Indian Division with the 47th Indian Infantry Brigade alone necessitating still wider dispersion to cover the defensive area vacated. In the meantime, the Japanese air activity and impending threat of land attack in force had increased. The Indian troops, after completing demolitions, evacuated Akyab in the early hours of 4 May 1942 and the Japanese moved in to occupy the island on the same day.

GENERAL SITUATION IN JULY 1942

The general situation about the beginning of July was that the Japanese, supported by Burmans, were in possession of the whole of Burma including the Arakan coast and Akyab port. They had naval superiority in the Bay of Bengal and air superiority over Burma and Eastern Bengal.

The XV Indian Corps was then responsible for meeting the

Japanese threat to Bengal and Orissa. The 14th Indian Division (consisting of the 47th Indian Infantry Brigade only) had been deployed in Eastern Bengal covering the approaches to India through Arakan and the 26th Indian Division was defending the area around Calcutta. The intervening coastal waters (Meghna and Ganges rivers and Sunderbans) were being patrolled by small armed river craft known as 2000 Indian Flotilla Indian Engineers. On the left flank of the 14th Indian Division, the IV Indian Corps was responsible for the defence of Assam. Guerillas were operating in the Lushai hills and in Tripura State. Chittagong, Comilla and Agartala aerodromes were under construction.

In August 1942, the policy regarding Chittagong was changed. Strict orders were issued that it was to be retained as a land base against Japanese attack. The 123rd Indian Infantry Brigade was sent from Imphal to defend it. This brigade had suffered from a high sick rate in Imphal and was not fully equipped and in fighting condition.

In September 1942, the role of the 14th Indian Division was again changed. It was ordered to move south of Chittagong to establish contact with the Japanese. The object of the advance was to clear Mayu peninsula and with the 6th British Brigade (which was well trained in combined operations) to capture Akyab, as a first step to the eventual reconquest of Burma. It was also decided that the 123rd Indian Infantry Brigade should form the spearhead of the advance. To enable the brigade to do so the 55th Indian Infantry Brigade was sent from the 7th Indian Division to take over the defence of Chittagong Area.¹

MEDICAL SITUATION (FEBRUARY 1942-SEPTEMBER 1942)

When the 14th Indian Division was ordered to move from Ranchi Area to Eastern Bengal in February 1942, the only divisional medical units, remaining after allotment to the brigades of other divisions, were 41 Indian Field Ambulance and 28 Indian Field Hygiene Section. 41 Indian Field Ambulance accompanied the 49th Indian Infantry Brigade to join the 14th Indian Division in Eastern Bengal. The 47th Indian Infantry Brigade had, therefore, to join the 14th Indian Division without a field ambulance.

The military hospitals in the area occupied by the 14th Indian Division at the time were CMH Chittagong (fifty beds) with a detention hospital at Patenga, IMH Comilla and IMH Dacca (each with about twenty beds). There was no recognised route of evacuation of casualties from Eastern Bengal and no ambulance train or coaches were available in the area. Information regarding communications in the area was scanty. The 14th Indian Division had to send its own reconnaissance parties to ascertain what communications existed. On 20 March 1942, the ADMS, 14th Indian Division accompanied the Divisional Commander with a small Headquarters to Comilla. En route the ADMS visited HQ Presidency, Assam District for detailed information about the area, but the information available was scanty. He asked for a CCS but none was available at the time. On 22 March 1942, however, 15 Indian CCS was warned to move to Comilla.

¹ Report First Arakan Campaign by Brigadier Creffield, 601/8294/H.

It was evident that casualties would have to be evacuated to Comilla and hence the bed strength of the IMH Comilla was immediately raised to one hundred beds. Additional buildings were also taken to accommodate further three hundred beds. Metre gauge ambulance coaches were also asked for to evacuate the casualties. The nearest Medical Stores Depot was at Asansol. HQ Eastern Command was requested to provide an Advance Depot Medical Stores.

On 29 March 1942, a further detachment of Div HQ including DADH moved from Ranchi to Comilla.

41 Indian Field Ambulance with a Sub-Section of 28 Indian Field Hygiene Section reached Comilla on 31 March 1942 and two days later moved to Fenny to join the brigade. On arrival at Fenny on 2 April 1942, Indian Field Ambulance opened its Main Dressing Station in a school. It was arranged that the MDS would move into Brigade HQ defended area when hostilities became imminent. A Battalion Group was defending the area at Fazilpur, another at Farhadnagar and a third three and a half miles to the rear at Govindpur which included Bde HQ. 'A' Coy 41 Indian Field Ambulance set up an ADS at Fazilpur and 'B' Coy at Farhadnagar. Bamboo huts were constructed for the patients in each area. All huts were surrounded by earth walls five feet high and six feet thick. Reception rooms and operating theatre were provided with concrete floors. In view of the possibilities of investment each ADS was planned to hold one hundred and fifty cases and the MDS three hundred cases.

Medical Arrangements in Chittagong (April 1942)

In view of the orders issued in April 1942 to evacuate Chittagong, if attacked in force, instructions were issued on 9 April 1942 to close down CMH Chittagong. The Detention Hospital at Patenga was closed completely. A small hospital (sixteen beds—six for British and ten for Indian troops) with medical officer i/c Royal Air Force personnel, one Indian Medical Service Officer and a Subedar of Tripura State Medical Service was left open in Chittagong. Nearly all the staff and equipment from the CMH were sent to IMH Comilla. All cases fit to travel but unlikely to be fit for discharge from the hospital were to be evacuated by rail to Calcutta, in the first instance, and later to Comilla when 15 Indian CCS got ready to receive cases. Arrangements were also made for serious cases to be admitted to the civil hospital in Chittagong. In view of the possibility of leaving Chittagong, surplus medical stores in the civil hospital were also sent to Comilla for the use of 15 Indian CCS.

By 10 April, 28 Indian Field Hygiene Section (less one Sub-Section with 14 Indian Field Ambulance) and 47 Indian Field Ambulance arrived in Mynamati. A few days after, 'A' and 'B' Coys of 47 Indian Field Ambulance moved to Laksam-Chandpur-Noakhali area where the 19th Indian Infantry Brigade was establishing defended areas. HQ Coy of 47 Indian Field Ambulance (potentially in reserve) remained at Mynamati to look after the sick from the divisional troops located along Mynamati ridge. 'A' and 'B' Coys provided three ADSs for the defended areas, one ($\frac{1}{2}$ Coy) at Majdi near Noakhali, another ($\frac{1}{2}$ Coy) at Shahtali

near Chandpur and a third at Daulat Ganj near Laksam. Each of these ADSs was to hold only those cases who were likely to return to duty within three days, others were to be evacuated by rail direct to Comilla (except at the time of investment when they might be required to hold a number of cases). Although distances by rail from the forward areas to Comilla were not great the journey was slow and very trying for seriously ill patients. Hence the Company of the Field Ambulance at Daulat Ganj was to act as a staging section for serious cases coming by rail from Chittagong and the two brigade sectors, who might require rest.

On 18 April 1942, 15 Indian CCS arrived in Comilla and opened up in requisitioned buildings. It also absorbed the existing IMH and the staff and stores sent to Comilla from Chittagong. As there was no scheme for the evacuation of patients out of the divisional area, additional equipment was demanded and arrangements were made for the construction of bamboo huts to accommodate a further three hundred cases.

On 5 May, part of the MDS of 41 Indian Field Ambulance moved out of Fenny (followed by the main body one month later) into the defended area at Govindpur. It took with it the reserve medical stores required to meet the threat of investment. Huts were by then ready for two hundred and fifty patients in the defended area. The staff of the MDS had to be accommodated four hundred yards away owing to the limited size in the islands of ground above flood water level. To facilitate evacuation of stretcher cases over miles of 'bunds' linking defended localities with the MDS, two wheeled stretcher carriers were constructed by one of the mobile workshop companies. But the wheels available were not found to be strong enough to carry the casualties.

The staff of 41 Indian Field Ambulance was kept fully occupied throughout. A large number of malaria cases and uncomplicated cases of gonorrhoea were treated. Individual training in swimming, watermanship, raft and shelter building, loading and unloading pack mules was carried out. Courses in first aid and sanitation were also run for the brigade troops.

Medical Detachments with Patrolling Columns

In addition to manning the defended localities around Fenny, the 47th Indian Infantry Brigade provided three mobile columns for offensive patrols. 41 Indian Field Ambulance provided medical detachments for these columns. Each detachment consisted of one medical officer, one BOR and three stretcher squads, eighty riding mules for casualties and six mules for equipment. These columns, however, were not called into action, but if the necessity had arisen 41 Indian Field Ambulance would have been left very thin on the ground. About the middle of May, the battalion holding Fazilpur area was sent for patrolling south of Chittagong. One NCO and a squad of stretcher bearers from 41 Indian Field Ambulance accompanied this battalion. Also, the Company running the ADS in Fazilpur area was sent to Daulat Ganj to take over the ADS which was originally set up by 47 Indian Field Ambulance and since the departure of the latter had been run by a RMO.^a

^a 47 Ind Fd Amb had left with 49th Ind Inf Bde for Imphal in May 1942.

After 47 Indian Field Ambulance had moved to Imphal with the 49th Indian Infantry Brigade, additional medical cover was required for widely scattered detachments of the 47th Indian Infantry Brigade. 41 Indian Field Ambulance was already fully occupied, holding a large number of cases to reduce the load on 15 Indian CCS. Regimental Medical Officers assisted by small parties of IORs from 15 Indian CCS and 14 Indian Field Ambulance were, therefore, sent to the detachments of the 47th Indian Infantry Brigade. This arrangement, although the only possible one under the circumstances, was far from satisfactory. The need for another field ambulance was urgently represented to the higher authorities.

By the middle of May 1942, 15 Indian CCS was overcrowded as a large number of afebrile malaria cases had accumulated. All efforts to open an Indian Convalescent Depot immediately with two hundred beds (Indian 150, British 50) in the Government House, Dacca, having failed, an improvised depot was opened in the Rest Camp at Comilla. To further relieve congestion at the CCS as many cases as were considered fit to travel were evacuated by ordinary train service to Calcutta. In special cases patients were also sent out as far as Lucknow, Dinapore and Lebong. Eventually, it was also decided to evacuate patients via Daudkhandi (situated on the river Meghna, thirty miles west of Comilla) to Dinapore and Sirajgunj.

Soon after, three metre gauge ambulance coaches were also made available to evacuate cases from Chittagong to Comilla. One MO and four BORs were sent on 8 August to staff the ambulance coaches. The patients then were not required to travel by ordinary trains.

On 7 July 1942, Indian Field Ambulance arrived in the divisional area with the 123rd Indian Infantry Brigade. HQ and 'A' Coy of the field ambulance went to Mynamati to look after the sick of divisional troops, including Div HQ which had moved from Comilla to Mynamati on 1 July 1942. On 8 July 1942, HQ 45 Indian Field Ambulance moved to Chittagong and opened up in the Railway Hospital buildings there. Its place in Mynamati was taken by 'B' Coy of the Field Ambulance. In addition to receiving sick from military units in Chittagong area and evacuating them to Comilla, HQ 45 Indian Field Ambulance was responsible for medical arrangements at the aerodrome. 'A' Coy 45 Indian Field Ambulance was split up into detachments and accompanied the 8/10 Baluch Regiment and the 1/15 Punjab Regiment (both under the 123rd Indian Infantry Brigade) which were carrying out deep patrols south of Chittagong.

Expansion of 15 Indian CCS

By August 1942, a British Dental Unit, an Indian Dental Unit and 16 Mobile X-ray Unit had joined 15 Indian CCS. The CCS had also expanded to 540 beds, and was in fact functioning as a General Hospital. But the lack of nursing staff was making its smooth running difficult. However, on 12 August the Matron arrived and after a few days nursing sisters also joined her. These ladies helped to raise the standard of treatment and comfort of the patients in the CCS.

Early in September 1942, 'B' Coy 45 Indian Field Ambulance moved from Mynamati to Fenny area and relieved the MDS 41 Indian Field Ambulance at Govindpur. Responsibility for medical attendance and evacuation of the sick in the areas Fazlpur, Farhadnagar, Laksham, Chandpur and Noakhali was delegated to respective Regimental medical officers.

15 Indian CCS was warned in September to move forward as an Indian General Hospital was due to arrive. OC 15 Indian CCS accordingly proceeded on a reconnaissance of Chittagong and selected the railway buildings as the most suitable site for a CCS. On 1 October, a light section of the CCS moved to Chittagong and opened in the railway buildings (relieving 45 Indian Field Ambulance there). The CCS thus was running two hospitals—one at Comilla and another at Chittagong. Large number of sick in both the places put a great strain on the staff of the CCS. By the end of November there were 1,000 cases at Comilla and 300 cases at Chittagong. The situation was further made difficult by the depletion of staff and absence of reinforcements. At last on 17 December the light section at Chittagong was relieved by 68 IGH and the main body handed over its patients at Comilla to 92 IGH on 21 December. 15 Indian CCS then had a brief breathing space before moving to Arakan.³

THE INDIAN-BRITISH ADVANCE BEGINS

Maungdaw and Buthidaung Occupied

About the middle of October 1942, a company of the 1/15 Punjab Regiment, the advance troops of the 123rd Indian Infantry Brigade occupied Maungdaw and Buthidaung without opposition. The plan was to use Maungdaw and Buthidaung as bases for operations as far south as Foul Point on the southern tip of the Mayu peninsula. On 24 October the first clash with the Japanese took place. A strong Japanese force landed about eight miles south of Buthidaung and Mayu river and rushed straight for the town. Simultaneously, another Japanese contingent marched on Maungdaw. The troops in Buthidaung and Maungdaw were forced to retire to Bawli Bazar via Teknaf. For nearly two months after the withdrawal to Bawli Bazar nothing of importance occurred. Further Indian advance was delayed by the weather and administrative difficulties. Heavy rains had set in but patrolling of the Japanese forward positions was continued.⁴

Medical cover

At the beginning of the advance into Arakan, in mid-October 1942, the field medical units of the 14th Indian Division were located as under:—

- (a) 45 Indian Field Ambulance (with 123rd Indian Infantry Brigade). HQ Chittagong (closed).

³ W.Ds. 14th Ind Div (Medical) W.Ds. 41 Ind Fd. Ambs. W.Ds. 15 Ind C.C.S.

⁴ Outline Narrative of First Arakan Campaign October 1942-May 1943, 601/7429/H.

- 'A' Coy Cox's Bazar running an ADS and detachment with the Coy of the 1/15 Punjab advancing on Maungdaw and another detachment with Coy 1/15 Punjab at Ramu.
- 'B' Coy Dohazari evacuating casualties to Chittagong from the 123rd Ind Inf Bde troops moving by road southwards to Cox's Bazar.
- (b) 41 Indian Field Ambulance (with 47th Ind Inf Bde) in Fenny Area preparing to move to Chittagong.
- (c) 28 Indian Field Hygiene Section.
HQ and one sub-section at Mynamati preparing to move to Chittagong. One Sub-Section with each 41 Ind Fd Amb at Fenny and 'A' Coy 45 Ind Fd Amb at Cox's Bazar.
- (d) 15 Indian CCS.
Light Section at Chittagong.
Heavy Section at Comilla (both open and over-crowded with patients).
- (e) ADMS the 14th Indian Division with rear Div HQ at Mynamati preparing to move to Chittagong.

A detachment of 'A' Coy 45 Indian Field Ambulance (consisting of one assistant surgeon and a stretcher squad) moved with the Coy of the 1/15 Punjab Regiment (advancing into Arakan) by route march to Tumbru and from there by sampan down the Naf river. A similar small medical detachment was attached to another Coy of the 1/15 Punjab Regiment at Ramu. After providing detachments to the 1/15 Punjab Regiment, the ADS at Cox's Bazar had been depleted in personnel considerably. It was, therefore, decided to move HQ 45 Indian Field Ambulance to Cox's Bazar and to despatch the remaining personnel of the ADS ('A' Coy 45 Indian Field Ambulance) to Ramu.

HQ 45 Indian Field Ambulance opened a MDS at Cox's Bazar on 17 October 1942. The facilities for handling patients there were primitive in the extreme. Sampans with patients had to come alongside a steep bank only a few yards in length. In wet-weather this bank was slippery and the carriage of stretcher cases was a difficult task. Arrangements were, therefore, made to construct a landing stage to facilitate the task.

Problems in Maungdaw

In the meantime, the forward Coy of the 1/15 Punjab Regiment with its medical detachment had reached and occupied Maungdaw. The OC 45 Indian Field Ambulance went forward and found the place in a chaotic state. The town conservancy system had broken down completely. Some 12,000 refugees (many suffering from small-pox amongst other diseases) had collected in the area. The death rate amongst these refugees was on an average fifteen per day. Hence the Hygiene Sub-Section was immediately ordered to proceed to Maungdaw. The OC 45 Indian Field Ambulance also started to organise treatment and vaccination of refugees. (Indian troops, however, withdrew from Maungdaw before the move of the Hygiene Sub-Section was carried out).

On 24 October, a Japanese detachment had advanced on Maungdaw and the detachment of the 1/15 Punjab Regiment had withdrawn according to plan. The medical detachment with the 1/15 Punjab Regiment first established a small ADS across the Naf river at Teknaf. No casualties were received. The ADS was then moved to Ukhia. On 3 November, an ADS was established in Bawli Bazar. By that time HQ 23rd Indian Infantry Brigade was in Ukhia. On 5 November, torrential rains started there which cut off the forward elements of the 123rd Indian Infantry Brigade. Consequently, ADS 45 Indian Field Ambulance had to hold a large number of the sick and wounded. On 10 November, 'B' Coy 45 Indian Field Ambulance moved from Dohazari to Ukhia and opened another ADS there.

60 and 63 Indian Field Ambulance arrive (November 1942)

About this time, 60 and 63 Indian Field Ambulance joined the 14th Indian Division and arrived in Chittagong. (These units were both on AT and MT scales of transport). Soon after, 63 Indian Field Ambulance relieved HQ 45 Indian Field Ambulance at Cox's Bazar. The latter then moved to Bawli Bazar and took over the ADS from 'A' Coy 45 Indian Field Ambulance. The ADS 45 Indian Field Ambulance at Ukhia was taken over by a Coy of 60 Indian Field Ambulance.⁵

Japanese abandon Maungdaw and Buthidaung

Meanwhile the Japanese had abandoned Maungdaw and Buthidaung and the Indian patrols had a surprise when on entering Maungdaw on 16th and Buthidaung on 17 December they found the two places had been evacuated by the Japanese forces, who had withdrawn further south down the Mayu river from Buthidaung and along the coast from Maungdaw. Both the places were occupied by Indian troops on 17 December. Subsequently the 14th Indian Division followed the Japanese on a two Brigade front, the 47th Indian Infantry Brigade moving down the coast towards Foul Point and 123rd Indian Infantry Brigade east of the Mayu river towards Rathedaung. Ale Thangyaw and Lambaguna were occupied on the evening of 27 December.

By 25 December, a patrol had entered Rathedaung and encountered no opposition. But when a stronger detachment entered the village again on 27 December it met with heavy LMG and mortar fire. Meanwhile the Indian troops had advanced as far south as Indian on the west and Sinoh on the east of Mayu range. Throughout the day on 31 December the 1/7 Rajput Regiment repulsed a series of attacks on their positions in Sinoh. The Japanese, having failed to dislodge the Indian troops from their positions, withdrew southwards to their prepared positions on the foothills. On 1 January, carriers of the 5/8 Punjab Regiment made a successful reconnaissance down the west beach of Mayu peninsula to Foul Point and encountered no Japanese troops (although traces of Japanese presence were evident).

⁵W. Ds. 41, 45 Ind Fd Ambs.

W. Ds. 15 Ind CCS.

Situation in the first week of January 1943

About the end of the first week of January 1943, the general situation in Arakan was that the area on both sides of the Mayu range north of east-west line through Laung Chaung village seemed clear of the Japanese forces, and troops of the 47th and 123rd Indian Infantry Brigades had occupied the Mayu peninsula north of Laung Chaung and the ground north of Rathedaung.

The Kaladan Force

During the advance into North Arakan reports were continuously received of Japanese and hostile Arakanese operating in the Kaladan valley, hence, two forces were sent into the Kaladan valley to secure the left flank of the 14th Indian Division. The first Tripforce composed of the Tripura State Force, moved from Dohazari to Paletwa in the Upper Kaladan valley, a journey of 80 miles. The Sangu river was used as a line of communication for the force. About the end of December 1942, they occupied Paletwa and Kaladan without opposition and the first fighting did not occur until Tripforce had moved south down the valley to Kyauktan.

Simultaneously, another force, known as Soutcol consisting of the 8/10 Baluch with engineer and medical detachments, reached the Kaladan after an arduous march from Taung Bazar, building a pack track line of communication. The role of both the columns was to sit on the line of the Kaladan, use constant patrols to observe Japanese movements and prevent the use of the river by the Japanese. In this way, they formed a deep and protecting screen for the forces engaged on the east bank of the Mayu river near Rathedaung.

Medical situation

In the meantime, the bearer companies, an anti-malaria unit, an Indian Mobile Surgical Unit and three Indian Staging Sections had arrived in the area and along with the other divisional medical units, they were rapidly pushed forward. After the capture of Maungdaw and Buthidaung (towards the end of December 1942) the medical situation in the divisional area was as follows:—

- (a) 45 Ind Fd Amb (with 123rd Indian Infantry Brigade)
 - HQ 45 Ind Fd Amb with Buthidaung running a MDS
 - 1 Indian Bearer Unit
 - 'A' Coy 45 Ind Fd Amb Moving with *southcol* into the Kaladan Valley leaving a detachment at Taung Bazar
 - 'B' Coy 45 Ind Fd Amb Moving with 10 LF South of Buthidaung to Taungmaw with fighting stretcher bearers of 1 Indian Bearer Unit
- (b) 41 Ind Fd Amb (with 47th Indian Infantry Brigade)
 - 41 Ind Fd Amb (less a Lt Sec) with 2 Indian Bearer Unit (less one coy) Moving south of Maungdaw by A.T.

- Lt Sec B Coy 41 Ind Fd Amb with one Coy 2 Indian Bearer Unit Moving south with 1/7 Rajput east of Mayu Range
- (c) 60 Ind Fd Amb and Ind Mob Surg Unit
 HQ 60 Ind Fd Amb at Kanyindan near Maungdaw running MDS
 6 Ind Mob Surg Unit
 'A' & 'B' Coys 60 Ind Fd Amb Closed at Kanyindan Personnel helping MDS and evacuating patients to Maungdaw Jetty
- (d) 63 Ind Fd Amb
 HQ 63 Ind Fd Amb at Cox's Bazar running at MDS
 'A' Coy 63 Ind Fd Amb at Bawli Bazar running a Staging Section
 'B' Coy 63 Ind Fd Amb at Nawapara running a Staging Section
- (e) 15 Ind CCS 16 Ind Mob X-Ray Unit at Chittagong; closed and ready move to Maungdaw
- (f) 18 Ind Anti-Malaria Unit Detachments at various key points
 28 Ind Fd Hyg Sec. on the L of C
- (g) 43,44,46 ISSs moving south of Chittagong.

45 Indian Field Ambulance (less companies deployed as mentioned above) continued to move forward with the 123rd Indian Infantry Brigade. it had however, to leave a detachment (one medical officer and twenty other ranks) to work as staging section at Buthidaung until the arrival of 46 ISS(C). By 31 December, 45 Indian Field Ambulance opened a MDS (HQ 45 Indian Field Ambulance) at Zedidaung and ADS ('B' Coy 45 Indian Field Ambulance) at Htizwe. The accommodation in the MDS was extended by building shelters to hold 150 patients.

On 1 January 1943, 'B' Coy of 45 Indian Field Ambulance moved forward from Htizwe and opened ADS at Thaungdara. By 12 January, 46 ISS(C) had relieved the detachment of 45 Indian Field Ambulance at Buthidaung and $\frac{1}{2}$ Coy of 60 Indian Field Ambulance had moved to Zedidaung. Finally the location of field medical units was stabilised with 15 Indian CCS at Maungdaw, 46 SS (C) at Buthidaung, $\frac{1}{2}$ Coy, 60 Indian Field Ambulance at Zedidaung, MDS (45 Indian Field Ambulance) and 6 Indian Mobile Surgical Unit at Thaungdara, an ADS (45 Indian Field Ambulance) at Kawbyin (some four miles forward) and a Relay Post (45 Indian Field Ambulance) at Hkanaunggyi. Stretcher bearers of No 1 Bearer Unit were deployed between MDS, ADS and Relay Post with forty bearers at the ADS, forty at the Relay Post and the remainder at Ywathit. The work of the stretcher bearers was very strenuous. They had to carry the injured for long distances largely over flat ground through the paddy fields. (Paddy fields even when dry are hard going). In one case a squad of four men carried a casualty to a total distance of thirty-two miles in one day.

To reduce the number of stretcher cases injections of morphia were not given to lightly wounded cases so that they might be able to walk to MDS. This relieved the strain on stretcher bearers.

Evacuation of Casualties

The casualties from the 123rd Indian Infantry Brigade were moved by sampans up to Buthidaung and from there by road to 15 CCS Maungdaw. Many of the sampans in the beginning had no protection against sun or rain. Their movement depended on favourable tide of the slow running water. But the road from Buthidaung to Maungdaw was in a fairly good condition. The minimum time in which a casualty could reach the CCS at Maungdaw was about nineteen hours (six hours to get to Zedidaung, six hours of waiting for the next tide, six hours from Zedidaung to Buthidaung and one hour from Buthidaung to Maungdaw).

Mobile Surgical Unit in Forward Area

In view of the delay in reaching the CCS it was essential to operate on selected cases as a life saving measure in the forward areas. For this 6 Indian Mobile Surgical Unit at Thaungdara proved very useful, and saved many lives which would have been lost during the slow and trying journey from the field to Maungdaw.⁶

Indian Field Ambulance on the Coastal Strip of Mayu Peninsula

45 Indian Field Ambulance advanced down the Mayu river with 123rd Indian Infantry Brigade. Simultaneously 41 Indian Field Ambulance (on AT) and 2 Indian Bearer Unit moved down the coastal strip of Mayu peninsula with 47th Indian Infantry Brigade. By 30 December, MDS (light and heavy) 41 Indian Field Ambulance was located at Kyaukpanduywama, light section 'A' Coy at Kodingauk, heavy section 'B' Coy at Atetnanra. RAPs were situated about 600 yards from the ADS 'A' and 'B' Coys. The heavy section of the MDS later moved to Atetnanra and enabled heavy section 'B' Coy to join its light section at Sinoh. On 8 January 1943, the heavy section of the MDS (less a small detachment) rejoined the light section at Kyaukpanduywama. A small medical detachment (one assistant surgeon, six other ranks and fifty stretcher bearers) was left at Atetnanra to act as a staging post for the casualties on their way from the ADS ('B' Coy) Sinoh to the MDS, a distance of eighteen miles.

Evacuation of Casualties from 47th Indian Infantry Brigade

Casualties were carried from RAPs to ADS by stretcher bearers and mules, from ADS 41 Indian Field Ambulance to MDS 45 Indian Field Ambulance, Buthidaung by sampans and from Buthidaung to Maungdaw by ambulance cars.⁷

Stalemate in Donbaik

Until 18 January, except for patrol and artillery activity and minor skirmishes there was no major engagement on any sector. But at 1100

⁶ W. Ds. 14th Ind Div (Medical).

W. Ds. 45 Ind Fd Amb.

W. Ds. 15 Ind CCS.

W. Ds. 63 Ind Fd Amb

⁷ W. Ds. 41 Ind Fd Amb.

hours, on 18 January, two battalions of the 47th Indian Infantry Brigade supported by artillery and four carriers launched an attack against the Japanese positions, about 2,000 yards north of Donbaik village and along the foothills southwards towards the village. But the attacking troops could not advance and came under heavy MMG and anti-tank fire. (Great gallantry was displayed by a Coy of the 1/7 Rajput and Hav. Parkash Singh of 5/8 Punjab won his V.C. during this action).⁸ At the same time, the Japanese air force became active and bombed the 47th Brigade area many times on 21 and 22 January. ADS 'A' Coy 41 Indian Field Ambulance was hit on 22 January and was moved about 300 yards to the north to a relatively safe location on the following day.

Meanwhile, the 47th Indian Infantry Brigade was relieved by the 55th Indian Infantry Brigade. (47th Indian Infantry Brigade went back to Ukhia to reorganise and rest). Preparations were begun to make a fresh attack with the aid of tanks. On 1 February, the 55th Indian Infantry Brigade supported by artillery and half a squadron of tanks attacked the Japanese strong points in Donbaik area. After some initial success the attack failed.

During the attack eight to sixteen stretcher bearers (2 Indian Bearer Unit) were attached to each RAP. The number varied with the role of the battalion concerned and the distance from the ADS. The stretcher bearers were often sniped and one of them was killed on 2 February. The injured were, therefore, carried along the beds of streams to avoid Japanese fire. The ADS was bombed and machine-gunned several times and had to move close to the foothills. Nevertheless treatment and evacuation of casualties continued smoothly and a total of 173 casualties were moved during the first week of February.⁹

123rd Indian Infantry Brigade attacks Rathedaung

The 123rd Indian Infantry Brigade had also launched an attack on Rathedaung on 3 February but did not make much headway. Over 200 battle casualties were evacuated by 45 Indian Field Ambulance.¹⁰

55th Indian Infantry Brigade attacks Donbaik

On 18 February, the 55th Indian Infantry Brigade made another attempt to capture Donbaik without success. The disposition of medical units of 41 Indian Field Ambulance remained as before. The car track forward of ADS was improved enabling a car post to be established within 100 yards of the nearest RAP. 148 battle casualties were also evacuated during this attack. Towards the end of February it was decided to evacuate casualties via the Mayu river to MDS 45 Indian Field Ambulance at Thaungdara instead of via Atetnanra to MDS 41 Indian Field Ambulance. 44 ISS (Combined) was despatched to Sinoh on 26 February to receive casualties from the 47th Indian Infantry Brigade and to despatch them by sampan to 45 Indian Field Ambulance. In the meantime 'B' Coy of 41 Indian Field Ambulance had also moved to

⁸ Outline Narrative of First Arakan Campaign October 1942-May 1943. 601/7429/H.

⁹ W. Ds. 41 & 45 Ind Fd Amb.

¹⁰ W. Ds. 41 & 45 Ind Fd Amb.

Myinbu. After the arrival of the ISS at Sinoh, the detachment of 'B' Coy, 41 Indian Field Ambulance rejoined its company at Myinbu.

At the end of February, medical units were located as below:—

- | | |
|---|--------------------------------------|
| (a) Donbaik Sector | 41 Ind Fd Amb with 2 Ind Bearer Unit |
| ADS 'A' Coy 41 Ind Fd Amb (light section) | Kodingauk |
| ADS 'A' Coy 41 Ind Fd Amb (heavy section) | Indin |
| ADS 'B' Coy 41 Ind Fd Amb | Myinbu |
| Staging Section 41 ISS | Sinoh |
| Staging Post Medical dett. 41 Ind Fd Amb | Atetnanra |
| MDS 41 Ind Fd Amb | Kyukpanduywama |
| (medical detachments and stretcher bearers were sent forward as required) | |
| (b) Rathedaung Sector | 45 Ind Fd Amb with 1 Ind Bearer Unit |
| ADS 'B' Coy 45 Ind Fd Amb | Kanbyin |
| Relay Post 45 Ind Fd Amb | Hkanaunggyi |
| MDS 45 Ind Fd Amb with 6 Ind MSU | Thaungdara |
| ½ Coy 60 Ind Fd Amb | Buthidaung |
| 46 ISS(C) | |
| (medical detachment and stretcher bearers sent forward as required) | |
| (c) 15 Ind CCS | Maungdaw. |

There were no major changes until the Japanese counter-offensive opened in March 1943.¹¹

JAPANESE COUNTER-OFFENSIVE

Early in March 1943, the Japanese launched a counter-offensive. A force marched north from Akyab and attacked Southcol which had to withdraw through unreconnoitred country over the mountains of the Mayu range. The intention of the Japanese force was to cut the line of communication of the Kaladan troops and after annihilating them to launch an attack on the left flank of the 123rd Indian Infantry Brigade. Hence they crossed the Kaladan valley and threatened the 123rd Indian Infantry Brigade from the left and rear.

'A' Coy of 45 Indian Field Ambulance withdrawing with Southcol had to abandon its equipment and animals. Casualties were not heavy, but one medical officer, one assistant surgeon and a number of other

¹¹ W Ds. 14th Ind Div (Medical)
 W. Ds 41 Ind Fd Amb.
 W Ds 45 Ind Fd Amb.
 W. Ds 60 Ind Fd Amb.
 W Ds 15 Ind CCS.

ranks failed to move with the company of the field ambulance. To avoid encirclement the MDS 45 Indian Field Ambulance and 6 Mobile Surgical Unit had already withdrawn from Thaungdara to Htizwe on 28 February. The ADS 45 Indian Field Ambulance simultaneously moved to Thaungdara, but a light section of the ADS with one-third section of 1 Indian Bearer Unit were left at old ADS site at Kanbyin. Evacuation of casualties from the 47th Indian Infantry Brigade to the MDS 45 Indian Field Ambulance continued for the time being. On 4 March, the light section ADS fell back from Kanbyin to Thaungdara. The casualties were evacuated by sampan via Laingwingyi Chaung. On 9 March, the ADS 45 Indian Field Ambulance withdrew to Htizwe and the MDS (45 Indian Field Ambulance) with 6 Mobile Surgical Unit and a hygiene sub section left for Kyaukbyinzeik. The personnel of the MDS marched to their destination and the equipment was carried in a sloop via Ngasanbaw Chaung. The heavy equipment was sent to Buthidaung and the MDS on a light scale opened at Kyaukbyinzeik. It was apparent by then that frequent moves would impair the efficiency of 45 Indian Field Ambulance and that further medical support would be required for withdrawing 55th Indian Infantry Brigade (which had taken over from the 123rd Indian Infantry Brigade). Therefore, on 8 March the ADMS 14th Indian Division warned 60 Indian Field Ambulance to move forward from Maungdaw. On the following day HQ and $\frac{1}{2}$ company of the field ambulance moved to Buthidaung (The other $\frac{1}{2}$ coy of 'B' Coy was running a staging section at Zedidaung and a company was at Taung Bazar).

In the meantime, a motorable fair weather road had been constructed between Buthidaung and Htizwe. The road crossed several chaungs across which vehicles had to be ferried by sappers. Several motor ambulance cars were operating on this route to supplement evacuation by sampans.

On 12 March, MDS 45 Indian Field Ambulance with 6 Mobile Surgical Unit moved from Kyaukbyinzeik to Ramyet Chaung and a detachment was sent to strengthen the ADS at Htizwe.

Fighting at Htizwe

On 13 March, heavy fighting broke out south and east of Htizwe area and bitterest hand to hand fighting raged for four to five days. On the night of 16/17 March, the 55th Indian Infantry Brigade which was engaged in this fighting carried out its withdrawal across the Htizwe Ferry. During the withdrawal the north bank of the ferry was subjected to heavy shelling. A large quantity of stores was destroyed and many horses and mules were lost. The Japanese did not follow the withdrawing troops and continued to bomb the battle area for six hours after the brigade had left.

The 47th Indian Infantry Brigade on the Mayu peninsula east of the Mayu ridge was being maintained from Htizwe. The loss of Htizwe threatened all the positions of the brigade on the peninsula and subsequently the brigade had to be maintained by a track from India to Atetnanra, but this route was also vulnerable to attack.

Medical Cover

On 9 March, 'B' Coy 41 Indian Field Ambulance had shifted to Aungziek from Myinbu. 'A' Coy ADS remained at Donbaik. The MDS at Kyaukpanduywama was reinforced by a detachment 6 British Field Ambulance, 7 Mobile Surgical Unit and 9 Transfusion Unit on 11 March. The ADS 'B' Coy, was shelled on 14 March and was shifted on the following day to Myinbu.

Evacuation of casualties via Mayu river was in direct view of the Japanese; therefore the evacuation was resumed via Atetnanra.¹²

Attack on Donbaik

Despite all difficulties it was decided to deliver a final blow on Donbaik. For this purpose the 6th British Infantry Brigade (trained in combined operations and ready for a direct assault on Akyab) was selected. The attack was launched on 18 March and was renewed two days later. Fierce fighting ensued but the attack was no more successful than the previous ones. 'A' Coy 41 Indian Field Ambulance, ADS 6 British Field Ambulance and 2 Indian Bearer Unit provided the immediate medical cover to the troops attacking Donbaik. Casualties were evacuated to the MDS 6 British Field Ambulance, which had a busy time and performed thirty-five operations during the day.¹³

The Japanese infiltrated on to the Atetnanra-Indin track and on 3 April they crossed the pass in strength and established a road block at Indin. All efforts to dislodge them from there failed. The 47th Indian Infantry Brigade and the 6th British Infantry Brigade were at last ordered to withdraw. They had to break through the Japanese positions (mainly along the beach) under cover of a smoke screen.

HQ and 'A' Coy 41 Indian Field Ambulance had already withdrawn to Maungdaw on 28 March. 'B' Coy had a very difficult time while withdrawing from the pass as a considerable part of its equipment was thrown away by the mules. Heavy and light sections of the company were at the top of Indin Pass and at its east end respectively. The pass was so steep that eight stretcher bearers had to carry one wounded and the patients had to be tied to the stretchers to prevent them from falling down. Riding mules of 6 British Field Ambulance Troop helped to move the casualties to as near the summit as possible.

4th Indian Infantry Brigade

The 4th Indian Infantry Brigade (26th Indian Division) had concentrated in Maungdaw area whilst threat to Atetnanra was developing. It was to be used to open up a new line of communication to the 47th Indian Infantry Brigade via the east of the Mayu road from Buthidaung. The brigade had concentrated at Hparabyin on the west bank of the Mayu river prior to advance towards Atetnanra. 1 Indian Field Ambulance provided medical cover to the brigade. But owing to the transport difficulties it arrived late and after staying for only a few days it was withdrawn to Gyindaw, west of Mayu hills and north of the

¹² W. Ds. 14th Ind Div (Medical); W. Ds. 41 Ind Fd Amb.

¹³ W. Ds. 41 & 60 Ind Fd Ambs.

6th British and Infantry Brigade area. A detachment of the brigade with a detachment of 1 Indian Field Ambulance was left in the Hparabyin area.¹⁴

On 18 March, 45 Indian Field Ambulance withdrew to Buthidaung and finally left the 14th Indian Division area with the 123rd Indian Infantry Brigade. All equipment of 'A' and 'B' Coys of 45 Indian Field Ambulance was lost during withdrawal. 60 Indian Field Ambulance took all the commitments of 45 Indian Field Ambulance and opened a MDS at Kindaung and ADSs 1 mile north of Taungmaw and at Kyaukbyinzeik. 'A' Coy 60 Indian Field Ambulance remained at Taung Bazar and continued to evacuate casualties (from the units patrolling the hills east of Taung Bazar) to Buthidaung. For the following three weeks no major changes took place. Evacuation of the sick and wounded continued smoothly to 46 ISS(C) at Buthidaung and from there to 15 Indian CCS at Maungdaw.¹⁵

THE WITHDRAWAL

In April 1943, Japanese intensified their counter-offensive on all sectors and continued their advance through the Mayu hills northwards with the object of clearing the Mayu peninsula and then rolling up the left flank of the 14th Indian Division from north and south. About the middle of April 1943, it was decided to concentrate the 4th Indian and 6th British Brigades south of Maungdaw-Buthidaung road to prevent the Japanese from gaining the road and capturing Maungdaw. On 14 April, the 26th Indian Division took over the operational control of troops in Arakan from the 14th Indian Division and Lieut-General W. J. Slim, C.B., C.B.E., D.S.O., M.C., Commander XV Corps assumed the general operational control of troops in the Arakan area and Chittagong. The situation east of the range had also been deteriorating. Consequently, about the end of April, the 71st Indian Infantry Brigade was ordered to move to the north and south of the Tunnel area. On 1 May, Maungdaw, Buthidaung and Bawli Bridge were bombed by Japanese aircraft.

On 4 May, the Japanese occupied a dominating position on point 551, immediately south of and overlooking the Maungdaw-Buthidaung Road. The 36th Indian Infantry Brigade, which arrived in the area in the last week of April, was detailed to dislodge the Japanese force but was unable to do so. Next day the road was cut between milestone 3 and 4. The 23rd British Infantry Brigade was placed under command of the 26th Indian Division from 6 May 1943. The brigade group, though incomplete arrived in Bawli Bazar on 7 May and was allotted the task of protecting the eastern flank of the 26th Indian Division and the line of communication between the Maungdaw-Buthidaung Road and Dohazari. All the units east of the Mayu range were ordered to cross to the west and they were over the Ngakyedauk Pass south of Bawli Bazar by 8 May. All transport east of milestone 3 on the Maungdaw-Buthidaung Road and the FSD at Hrindaw was destroyed.

¹⁴ W.Ds. 14th Ind Div (Medical).

¹⁵ W.Ds. 45 Ind Fd Amb.

EVACUATION OF MAUNGDAW

It was now decided to secure Maungdaw and the ground necessary for its retention throughout the monsoon and all the brigades under command of the 26th Indian Division took up positions with this end in view. At this time the Division had the 4th Indian Infantry Brigade, 6th British Infantry Brigade, 71st Indian Infantry Brigade, 36th Indian Infantry Brigade, 55th Indian Infantry Brigade and 23rd British Infantry Brigade (70th British Division) under its command. But later on, in view of the weak east flank of the Maungdaw position and the possibility of its line of communication being cut from the east, as well as depleted strengths throughout due to the high sick rate from malaria and lack of trained reinforcements, it was decided not to hold Maungdaw permanently. The Japanese continued to infiltrate against the Allied communications so it was finally decided to take up positions further north, abandoning Maungdaw, although it had been developed as an advanced base since its capture in December and its loss involved considerable destruction of stores. On 12 May, the evacuation of Maungdaw was completed and the forces north of Maungdaw fell back to new positions in the areas of Goppe Bazar, Taung Bazar, Bawli Bazar and Nhila in the Teknaf peninsula.

Before the start of the monsoon, the Indian and British forces in Arakan were back approximately to the positions from which the advance had begun five months earlier.

Medical Cover

The medical units present in the field at that time were as follows:—

- (a) No 1 Indian Field Ambulance in support of the 4th and 55th Indian Infantry Brigades.
- (b) No 6 British Ambulance in support of the 6th British Infantry Brigade.
- (c) No 60 Indian Field Ambulance in support of the 71st Indian Infantry Brigade.

Medical units in support of the above were:—

- No 1 Bearer Unit
- No 28 Fd Hyg Section
- No 35 & 20 MA Section
- No 15 CCS & 16 Mob X-ray Unit
- No 6 & 7 Mob Surg Units & No 6 (Transfusion Unit)
- No 63 Fd Amb (L of C)
- No 44, 46 & 50 ISSs (combined)
- No 11, 16 Fd Amb Tps
- also Hospital Flat Pennar, sloops and sampans.

The greater portion of the month of April was spent in vigorous patrolling on the west side of Mayu range. This was carried out by the 4th Indian and 6th British Infantry Brigades with Nos 1 Indian and 6 British Field Ambulances in support. Casualties were evacuated by road to No 15 Indian CCS at Maungdaw and thence by Hospital Flat Pennar up the Naf river to Tumbru Ghat and from there by MAS

to the ambulance trains at Dohazari, staging at Ramu (MDS 63 Indian Field Ambulance) and Chiringha (50 ISS) on the road. On the west side of the Mayu range, Mayforce (55th and 71st Indian Infantry Brigades) carried out deep and extensive patrolling in the direction of Hparabyin-Seinnyinbya-Kindaung.

At the beginning of May, a strong Japanese concentration on the top of the Mayu peninsula threatened to drive a wedge between Mayforce and the troops to the west of the range. During the first week in May, the Japanese had succeeded in cutting the Maungdaw-Buthidaung Road thus preventing movement from the east to the west side of the peninsula. During the same week the division was strengthened by the arrival of the 36th Indian Infantry Brigade, together with 48 Indian Field Ambulance. As a strategic reserve the 23rd British Infantry Brigade including a British Field Ambulance was moved into Cox's Bazar area.

In conformity with the changes in the tactical situation, at the end of April, MDS run by the HQs of No. 1 Indian and 6 British Field Ambulances was established at an island to the north of Maungdaw Jetty. To this MDS No 6 Field Transfusion Unit and No 7 Mobile Surgical Unit were attached. Evacuation to this MDS was by means of:—

- (a) Unit stretcher bearers
- (b) Bearer Coy personnel
- (c) Field Ambulance Troops Mules
- (d) Motor Ambulance cars working from Car Posts.

From the MDS to 15 CCS at Tumbru Ghat casualties were evacuated by Hospital Flat Pennar with 44 ISS on board in charge of patients.

The medical tactical picture on the east side of the Mayu range was as follows:—

The 55th Brigade Group (area Hparabyin) evacuated casualties by regimental stretcher bearers, bearer coy personnel, and mules of the field ambulance troop as far as sampan head on the Mayu river where motor launches and sampans belonging to Mayforce flotilla carried them as far as Buthidaung. In Buthidaung 46 ISS provided a staging halt, whilst the more serious cases were detained at HQs No 60 Indian Field Ambulance. Until the cutting of the Maungdaw-Buthidaung Road casualties were evacuated by motor ambulance cars as far as Maungdaw. After the cutting of this road Mayforce troops advanced northwards via Letwedet in the direction of Taung Bazar. Before leaving Letwedet as many casualties as possible were evacuated via the Ngakyedauk Pass as far as Wabyin where 48 Indian Field Ambulance had established light MDS 60 Indian Field Ambulance with one coy of 42 Indian Field Ambulance under command and with No 6 Mobile Surgical Unit in support accompanied the troops advancing to Taung Bazar and established an MDS at Goppe Bazar. Evacuation from here was by means of bearer unit personnel and mules of the field ambulance troop over the Goppe Pass as far as Bawli Bazar (south).

On 6 May, orders were given for Maungdaw to be evacuated by 10 May. The brigades were moved by MT and took up the line Taung

Bazar-Goppe Bazar-Bawli Bazar-Pruma Chaung-Nhila-Mathabhanga. Thereafter, the final disposition of troops was:—

One Brigade Group on left flank, Taung Bazar to Pruma Chaung inclusive with Hqrs at Bawli Bazar. In support of this Brigade Group 48 Indian Field Ambulance established a MDS on the north bank of the Pruma Chaung with an ADS on the south bank and one platoon in Goppe Bazar. The Brigade Group on the right flank held the line Nhila to Mathabhanga with a forward detachment at Teknaf, and the Hqrs was located at Tumbru. In its support 46 Indian Field Ambulance Hqrs plus one company established a MDS at Tumbru Ghat and an ADS was established at Nhila. After the stabilisation of the new line Nos 8 Indian and 9 British CCSs were moved to Dhopalong where in addition to holding ordinary medical and surgical cases, a combined malaria treatment centre was taken over from 63 Indian Field Ambulance who had initiated it a little earlier.

During May, the 23rd British Infantry Brigade was replaced at Cox's Bazar by the 14th British Infantry Brigade Group. This included a British field ambulance. After 6 weeks' stay this complete Brigade Group was withdrawn and replaced by a Brigade Group from the 26th Indian Division.

CHAPTER XVII

Operations of the 77th Indian Infantry Brigade

After Rangoon had fallen in March 1942, the C-in-C in India, General Sir Archibald Wavell, realised that India was faced with a situation similar to that confronting the United Kingdom in June 1940. A strong, aggressive and self-confident hostile power would soon be poised on the Indian frontier at a time when no trained force or equipment was available to counter the invasion. In 1940 Britain had the English Channel between her and the victorious German Army, whereas in 1942, India had the mountains and the jungle to separate the valley of the Chindwin from that of the Brahmaputra. The position was fraught with danger. General Wavell adopted methods similar to those in British in 1940 and decided to form special units to act offensively into the Japanese-held territory with the object of gaining information of hostile intentions, concealing his own weakness, misleading the opponent, and sustaining the morale by frequent announcements of minor successful offensives. Accordingly, he signalled the Middle-East Command for the services of some officers who had led the patriot groups in the Bush Warfare against the Italians in Abyssinia. Major Charles Orde Wingate, DSO, volunteered for this new role, and on arrival in India was appointed Brigadier. He flew to Maymyo when the fall of that town was imminent and realised that nothing could be organised before the forces had been inevitably driven out of Burma. In Maymyo he contacted the Bush Warfare School under the command of Major Calvert, R.E., which had been set up to train British and Chinese people for guerilla activities in China against the Japanese.

Wingate realised that the jungle of Upper Burma would afford complete shelter for a small force from detection by the Japanese like the proverbial needle in the haystack. But the problem would be how to feed and maintain the force. His experience in the Abyssinian campaign had taught him that maintenance by air and control by wireless was one solution. Pack transport and men on their feet would alone be able to cross the difficult terrain likely to be met. The force had to be small to be successful in eluding the enemy, yet large enough to deliver effective blows. Moreover, it was essential that the number of such small self-contained columns should be large so that the Japanese might be easily misled and their communications disrupted. He fixed the figure of 400, all ranks, as the ideal total for each column. If a column encountered opposition too strong for it to overcome, it was to break up into dispersal groups of some forty men and reassemble at a pre-arranged rendezvous. Equally, if a dispersal group met opposition, it was to scatter into groups of two or three men.

The Object

The primary object of the first Wingate expedition (popularly known as the Chindits Operation) was to test the above theory and to

find out the potentialities for revolt of the Burmese, especially the Kachins. A purely military object, however, was to disrupt the Shwebo-Myitkyina line of communication to exploit the resultant situation and, if feasible, to cross the Irrawaddy river and operate against the main Japanese line of communication to the north and east i.e., Maymyo-Lashio and Bhamo.

The Composition

In June 1942, arrangements were made to form a Long Range Penetration Group (77th Indian Infantry Brigade) of eight columns out of the following:—

- 13 Bn, The King's (Liverpool) Regt, 3/2 Gurkha Rifles,
- 142 Company (composed of Commando elements from the Bush Warfare School Maymyo and made up to strength by Infantry drafts),
- 2 Burma Rifles (composed of Karens and Kadins),
- A number of RAF Sections commanded by Flight Lieutenants with recent flying experience,
- One brigade Signal Section from Royal Signals Corps.

The shortage of officers who could talk to Gurkha ranks in their language and the inclusion of new Gurkha recruits, many of whom had not even had their Recruits Rifle Course, in all columns as muleteers—many of them in-charge of two mountain artillery mules—were anticipated to cause a series of difficulties. It is well nigh impossible for the largest man to control two mules in the jungle much less for a sixteen year old untrained Gurkha boy, particularly if no officer or NCO in the column could speak to him in any language except English.

The Training

The neighbourhood of Saugor in the Central Provinces of India was chosen for training because of its similarity to the dry zone in Upper Burma in which the 77th Indian Infantry Brigade was to operate. Training started in July 1942 but the late arrival of mules and muleteers delayed a full scale exercise until December.

The Medical Policy during Training

Wingate visualised that the average British soldier would be dependent on his doctor for his every day minor ailments. There he insisted on all ranks rooting out the prevailing hypochondria. The visits of medical officers to the column during the training period were reduced to once a week. Platoon commanders were encouraged to treat minor ailments themselves. Soldiers were trained to disregard minor injuries and sicknesses. The men were gradually made to realise that sickness meant capture or death. The results were spectacular. Within three weeks of the entry into the jungle for training in the monsoon 30 per cent men of the King's Regiment were either in the hospital or on the way to it, and four weeks later the sick rate had risen to 70 per cent. But as training proceeded the sick rate rapidly fell. Towards the end of the training the sick rate was less than three per cent.

In January 1943, 77th Indian Infantry Brigade arrived at Manipur Road from where it made a march of 133 miles to Imphal. An air base was established at Agartala where three months supplies of every nature were collected. On 7 February 1943, Field Marshal Wavell reviewed the brigade. Before leaving the Field Marshal saluted the brigade, a gesture that was much appreciated by all ranks. On the approach march the sick were sent to the hospital but by the time Imphal was reached the columns were in fine physical condition.

The Medical Arrangements for the Sick and Wounded on the March

Before leaving Imphal it was explained to every officer and man by Brigadier Orde Wingate personally that if any one for any reason could not move at the pace tactical considerations imposed on the column, he would be left behind in a village or transported to an emergency landing ground (if one could be made available). Everything possible, however, would be done to ensure provision of all available comforts. Seriously wounded or sick would be put in charge of an officer especially detailed for the purpose at the tail of the column. During the march they would be left at a village previously selected by the column commander with sufficient money and medical comforts. As a further safeguard a proclamation would be issued to the villagers looking after the sick or the wounded. The headman of the village was told in proclamation that in case sick and wounded were helped and well looked after they would be rewarded otherwise they would be punished and their village destroyed by the 'Mighty Air Force'. All ranks were told the contents of this proclamation.

Preventive Inoculations and Vaccination, Weeding out of the Unfit

All ranks were vaccinated and inoculated and thus protected against small-pox, enteric group of fevers, tetanus and cholera. Enough anti-cholera serum was also taken to do the cholera inoculation after six weeks. Medically unfit (physically weak and mentally unsuitable) were weeded out.

The Medical Staff

The brigade marched from Imphal on 8 February 1943. Owing to the shortage of personnel only seven columns actually entered Burma. Each of the columns consisted of BOs, VCOs, GORs, BORs, RAF and Burma Rifle Platoon personnel. There were also mules, horses, dogs and bullocks in some columns. One ground sheet and one blanket per man were carried on the mule. Remaining personnel kit (necessarily limited) and light scale rations were carried by the men. No tents were supplied. 'Individuality in the matter of dress was freely expressed especially amongst British Officers'.

In each column medical staff was as follows:—

				<i>British Column</i>	<i>Gurkha Column</i>
Medical Officers	..	..	..	1	1
British Other Ranks	..	..	..	2	Nil
Indian Other Ranks or Gurkha Other Ranks	..		..	2	4

The Medical Problems

The medical officer with each column had an extremely difficult task ahead of him. Amongst many difficulties the following required individual initiative and improvisation:—

- (a) Practical absence of any means of evacuation of casualties.
- (b) Disposal of casualties in the absence of facilities for evacuation and the effect on morale of the troops consequent on leaving the wounded with the local villagers.
- (c) Limited carrying space for drugs and equipment.
- (d) One medical officer could not be present everywhere in a dispersed column.
- (e) Physical fitness required of all personnel.
- (f) Sanitation and hygiene.
- (g) Water, food (including protective food).

The Plan

Wingate's problem was to get his brigade in seven columns through the IV Indian Corps front across the Chindwin river and then to cross some 150 miles through the Japanese occupied country without interception. A plan to induce the Japanese to believe that the brigade was operating on the east flank of the 23rd Indian Division against the Kalewa position was made. No. 1 Group (HQ and Nos 1 and 2 Gurkha Rifle columns) was to cross the Chindwin river at Auktaung south of Sittaung. The Officer Commanding 142 Company (Commando) was appointed officer incharge deception and wore Wingate's own insignia of Brigadier. At the same time the IV Indian Corps arranged for the 23rd Indian Division to stage a raid on the west bank of Chindwin towards Kalewa to convince the Japanese of the genuineness of the threat to the south. Once across the Chindwin OC No 1 Group (1,000 men and 250 animals) had orders to move unobserved over 250 miles through the Japanese occupied territory across the Irrawaddy river at Tagaung and to await the main column in the hills near Mongmit.

The main force was then to cross the Chindwin some 50 miles north near Tonhe. Wingate's final picture in the planning stage was an attack on the Shwebo-Myitkyina railway culminating in the crossing of the river Irrawaddy, with the reasonable certainty that the brigade would return to India by using dispersal methods.

It will be noted that Wingate violated his own theory that a column should be small enough to elude the enemy, as stated above, and moved the brigade only in two detachments, one of two and the other of five columns, and they broke up into smaller groups only when dispersal into parties of some forty each was eventually ordered.

The Achievements

A force consisting of some 3,000 men and about 1,000 animals penetrated about 200 miles inside the Japanese occupied territory. It blew up vital bridges and railways and laid booby traps. The first phase of the plan was completed with singular success. But this success was short-lived. The Japanese repaired the damage, and were running the railway within a fortnight of the first interruption.

The troops crossed the river Irrawaddy successfully. The heat was intense and water was scarce. Troops were exhausted. The Japanese activities and resistance had also increased. The RAF advised that supply much further east would become increasingly difficult.

Thereafter on 26 March 1943, it was decided to withdraw. Wingate considered that the best course was to divide the force into dispersal groups and to fan out crossing the river Irrawaddy on as extended a line as possible, more or less simultaneously. Not one of the areas traversed by any dispersal group was free from the Japanese yet most of the troops reached the Chindwin near Sittaung and came under the 23rd Indian Division, other crossed further north. No 7 column, 150 strong, marched into China. This column was flown to India by the USAAF.

The men with 70 lb. pack had marched more than 750 miles, most of them 1,000 miles. During the march about 80 per cent were treated for sore feet mostly multiple blisters. Every man was instructed to report to the medical officer at the first long halt if his feet became sore. If the skin was simply reddened elastoplast was applied. In case of a blister the area was cleaned with acriflavine, serum was let out and finally the area was covered with elastoplast. If the blister was already broken the area was cleaned with acriflavine and sulphanilamide powder was liberally applied and the area was covered with elastoplast. The men marched with their blisters. Elastoplast was allowed to remain till it fell off. On returning to Imphal their feet were in good condition. Despite the wet weather and cold nights incidence of upper respiratory infections was low even though throat irritation and bad cough were common. There were a few cases of diarrhoea but sulphaguanidine soon controlled them. A few cases of eidermo-phytosis were observed. Jungle sore did not prove to be a problem probably due to the fact that shorts were not worn. Body louse and scabies were also encountered. Cases with vitamin B deficiency especially tingling in the hands and feet, weakness and cramp in the muscles especially at night were found.

Disposal of Casualties

The casualties were either carried forward or walked with the column. Stretchers at times were made of bamboos. Sometimes a litter was made which could be dragged behind either a horse or a mule. Only a few battle casualties were left in villages. A number of these survived and were recovered when Burma was reoccupied in 1945. Shortage of ambulance planes and lack of air strips rendered the evacuation of casualties by air an impossibility. It was realised that inability to evacuate casualties was a serious organisational defect and during further operations in 1944 a system of air evacuation of casualties was introduced.

The Medical Equipment and Drugs

Two mules for medical stores were allotted to each column. This limited the equipment to four panniers approximately 300 lbs. in gross weight. It was obvious that ordinary fitted panniers were not

satisfactory. Consequently each medical officer figured out what he wanted and how he wanted it packed (for details of items see Appendix XVI). It was felt by the medical officer that antivenom, anti-anthrax serum, Carborosone, a Neil Robertson's stretcher, a 'four men cooking set' and one groundsheet per pannier could have been usefully added to the stores and equipment already supplied. One important consideration about packing and distribution of the medical drugs and equipment was that the medical officer could not be everywhere in a dispersed column. First aid haversacks which were, therefore, made contained elastoplast, triangular bandages, roller bandages, shell dressings, scissors, sulphonamide powder, M.B. 693 and morphia. First aid directions were also given for the use of all the contents of the haversack. One pannier was kept for use by the medical officer whilst others were placed in the Column HQ area. Orderlies were trained to take out anything required at any time in the minimum of time. First aid haversacks were carried by dispersal groups and patrols who received detailed instructions and training for their use. It was found that an officer could be trained in the use of each item in about four hours. A surgical haversack was carried by the medical officer. Medical orderlies remained always as close to the medical officer as possible. As soon as the column stopped the orderly started a fire to prepare hot tea. However, the medical officer was called upon to do a great deal outside his sphere. Physical fitness, resourcefulness and military knowledge were essential for his success.

Sanitation

Each dispersal group was made responsible for its own shallow trench latrines. The dispersal group commander was responsible for their sitting and making bivouacs. Opportunities for washing were not frequent.

Water

The question of water supply was difficult. The only feasible ways to give safe water supply were:—

- (a) the use of sterilising tablets,
- (b) establishing in the centre of the bivouac area a water point where one of the water duty men could be posted with bleaching powder solution in a water bottle (eight scoopfuls of bleaching powder to a water bottle). A scoopful of this mixture was added to each water bottle.

Medical officers ensured that all were given superchlorinated water. The troops did not much complain about the taste. Horrocks box of necessity was not of much use.

Rations

The ration problem was difficult and required considerable initiative on the commander's part. Hardscale ration was as follows:—

Shakarpara biscuits	..	..	..	12 Ounces
Cheese	..	..	..	2 Ounces

Milk powder	..	..	..	1 Ounce
Raisins and almonds	..	..	..	9 Ounces
Tea	..	..	..	3/4 Ounce
Sugar	..	..	..	4 Ounces
Acid drops and chocolates	..	..	..	1 Ounce
Salt	..	..	..	1/2 Ounce
Cigarettes	..	..	..	2 Pkts
Matches	..	..	..	1 Box.

Not one of the columns, however, received its proper scale. A high percentage of rations was lost or collected by watchful locals. The average was forty rations in eighty days. A large number of rations contained neither cheese nor chocolates and the weight had to be made up with dates. A high proportion of cheese tins when supplied were blown. The quality of biscuits had deteriorated. It was noticeable that as conditions became worse the tendency was for men to prize their bar of chocolate. Rations on the whole were good if they arrived in the right quality and quantity. A slightly more generous allotment of supply dropping planes would have ensured the full scale ration until the brigade broke up into dispersal groups when the period of living off the country became inevitable.

Clothing and Equipment

Standard army clothing was used by the brigade with the exception of Water Wings and Toggle Ropes, which were produced by the brigade. The following items were carried:—

Equipment on the man

Hat felt, for all troops,
 Shirt—tuck in type flannel,
 Trousers—khaki drill or battledress,
 Boots—standard British or Australian or South African pattern,
 Anklets—standard web pattern,
 Equipment—standard mills type.

Carried in the pack

Spare pair socks,
 Toggle rope,
 Water wings,
 Jersey pullover (optional),
 Mosquito veil,
 Cap comforter,
 Two grenades,
 Six days rations.

The Everest Man Pack carrier was used by some in preference to the mills equipment.

Water Wings were extremely useful till inflatable rubber belts were dropped on the column towards the end of the campaign. The latter were much preferred. The Indian pattern ammunition boots were found to be unsatisfactory, their average life being about two weeks. Australian, South African and English boots wore well. Boots,

light enough to make quiet movement possible but sufficiently strong to stand up to about a month's wear, were considered the best for such warfare. Brigadier Wingate suggested hardened rubber soles and heels in dry weather. He suggested the possibility of using the imprint of the naked foot as the pattern on the sole as ammunition and hockey boots left a definite pattern on the dust of the track. The mosquito veils, merely tubular veils which could be slipped over the hat, with a tape through the top which could be tightened over the brim, the bottom end being tucked in the shirt, originally produced by the brigade, were preferred to the ordnance issue as the rings of the latter pattern were of such a size as would not go over the brim of the felt hat. Socks wore badly. Pashmina Kashmir blankets were preferred for their light weight and could be wrapped up into a very small bundle. Equipment on the whole was made to stand a lot of wear and consequently was not satisfactory when the men had to carry everything on their backs. Obviously the equipment should be as light as possible, even though it might have to be replaced more frequently.

The Return

By the first week of June, over 2,000 of the 3,000 who had entered Burma re-entered India. Of the one thousand nearly 450 were battle casualties. All those who re-entered India through the IV Indian Corps front were at once sent to 19 Indian Casualty Clearing Station at Imphal. The men had endured severities to which there are few parallels. Many had been reduced to mere skin and bone. The majority were suffering from beriberi and minor digestive disturbances. Not a few had contracted malaria again after recrossing the Chindwin river. It is surprising, however, that not more than five per cent had more than slight ailments and readily responded to treatment. All had borne tremendous hardships with cheerfulness and resolution. The kind and expert care from the medical and nursing staff soon helped to offset the effect of the strain and privations to which they had been subjected during their arduous march. A percentage was unfit for rigorous marching for a long time, but the remainder constituted a core of experienced personnel eminently qualified for command, training and employment in further similar operations.

CHAPTER XVIII

Second Arakan Campaign

THE MONSOON OPERATIONS

The approach of the monsoon in May 1943 found the forward troops of the 26th Indian Division facing the Japanese forces on Maungdaw-Buthidaung line. No large scale operations were possible. Owing to the difficulties of transportation in the inclement weather the 55th Indian Infantry Brigade, 6th and 23rd British Infantry Brigades were withdrawn to Chittagong. The 26th Indian Division troops were busy in aggressive patrolling into the Japanese positions. The latter were building strong defences on tactical features and vantage points. The 26th Indian Division troops had taken up the line Taung Bazar-Goppe Bazar-Pruma Chaung-Nhila-Mathabhanga. Their final disposition and that of their accompanying medical units had been mentioned earlier.

After stabilisation of the new lines No 8 Indian and No 9 British CCSs were moved to Dhoapalong. The two CCSs in addition to holding ordinary medical and surgical cases, took over the forward malaria treatment centre from 63 Indian Field Ambulance. The casualties were evacuated along the following routes:—

- | | |
|---------------------------|---|
| Bawli Bazar to Nawapara | By sampans, by 44 ISS and by road on 35 MAS vehicles. |
| Nawapara to Cox's Bazar | By road via Ramu & Rumkhapalong. The latter link road became unusable soon after the monsoon started. |
| Cox's Bazar to Chittagong | By steamer and by road via Ramu to Dohazari and thence by railway to Chittagong. The steamer could take 100 patients and was available for four days in a week (1,000 beds were available at Cox's Bazar—600 beds in 72 IGH—200 beds in 9 CCS and 200 beds in 8 CCS). |
| Ex-Chittagong | By hospital ship to Calcutta and by railway to Comilla and Dacca. The hospital ship removed about 1,250 patients on every tenth day and the railway carried approximately 50 cases daily (1,600 beds were available in Chittagong—700 beds in 68 IGH—500 beds in 56 IGH and 400 beds in advance malaria treatment centres). |

On 8 July, a company of 1 Lincolns carried out a raid against Maungdaw and remained in occupation of the town for five hours. As a consequence of this raid the Japanese reinforced and strengthened their defences in the coastal area. By the beginning of August, Japanese activity had markedly increased in the western foot-hills and on the spine of Mayu range, north of the Maungdaw-Buthidaung road. On the evening of 14 and 17 August, a 26th Division post on the summit

of Ngakyedauk Pass was engaged by the Japanese. In the first week of September, the 26th Division patrols came under heavy medium machine gun and mortar fire from the area between Ngakyedauk and Awlanbyin on the Ngakyedauk Chaung. Casualties were inflicted on both sides. About the same period contact was made with the Japanese in the upper Kaladan valley.

During the entire monsoon period whilst British and Indian troops in the forward areas were busy patrolling their respective sectors the Japanese directed their energies towards the construction of strong defences on tactical features and vantage points. Despite continuous harassment by the energetic patrols the Japanese proceeded apace with the construction of the defensive line and by the beginning of August it was found that the Japanese had established a defence line stretching from Razabil to Sannyinweywa. The Japanese had built strong bunkers, roofed dugouts and communication trenches along this line and had made it really formidable. The early days of August were marked by increased Japanese activity in the western foothills and the spine of the Mayu range north of the Maungdaw-Buthidaung road. It was evident that the constant patrolling activities had placed a great strain on the 26th Indian Division. The division which had arrived in April had fought strenuously and continuously during the exacting conditions of the monsoon in Arakan. It was, therefore, decided to release this division for a much needed rest and the 7th Indian Division was earmarked to take its place. By 25 August, the 114th Indian Infantry Brigade took over Ngakyedauk Pass-Goppe Bazaar-Taung Bazar area. The change over was, however, to be made in even stages spread over a long period and the relief was completed only in October. One brigade of the 26th Indian Division was retained at Cox's Bazar as Corps reserve. The climate and terrain had made the task of the medical services arduous. Stretcher bearers had to collect casualties from RAPs and carry them to the MDS five miles away.

Post Monsoon Period

The initial operations of the 7th Indian Division took the form of local advances. By the end of September, the 114th Indian Infantry Brigade was on the east side of Mayu range, and the 89th Brigade on the coastal plain to the west. The 2nd KOSB was in the Wabyin area, 4/8 Gurkha in the area 'Briasco' brigade, some ten miles south of Bawli, and 7/2 Punjab in Bawli area and on the summit of the Goppe Pass. Further progress both in the coastal plain and in the Kalpanzin lay in occupying the dominating heights of the Mayu range whose altitude averaged between 1,000 to 2,500 feet. On 14 October, the KOSB moved south from Wabyin and occupied some low wooded hills in the area Zeganbyn. Simultaneously a Coy of 4/8 Gurkha climbed the main ridge and occupied two dominating features. In the following few weeks the 7th Indian Division troops had slowly increased their pressure on the Japanese forward positions.

The medical arrangements during the period were as follows:—

- (a) ADS (66 Ind Fd Amb) Wabyin area.

- ADS (66 Ind Fd Amb) Briasco Brigade sampan head.
- ADS (66 Ind Fd Amb) Bawli North.
- (b) ADS (No 1 Platoon 'B' Coy 44 Ind Fd Amb less dett.) Nhila.
- ADS (No 2 Platoon 'B' Coy 44 Ind Fd Amb) Top of Goppe Bazar.
- ADS ('A' Coy 44 Ind Fd Amb) Bawli South.
- MDS (HQ 44 Ind Fd Amb) Tumbru Ghat.
- (c) ADS ('A' & 'B' Coys 54 Ind Fd Amb) Taung Bazar
- Foot of Goppe Pass.
- MDS (HQ 54 Ind Fd Amb) Foot of Goppe Bazar.

1 Indian Bearer Coy established its headquarter at Goppe Pass and attached its two platoons with 54 Indian Field Ambulance and one platoon with 66 Indian Field Ambulance.

The casualties were carried to ADSs and car post by stretcher bearers, and to MDSs by ambulance cars or jeeps. From Tumbru Ghat and Bawli North they were moved by hospital shups or sampans to 8 Indian Casualty Clearing Station and 9 British Casualty Clearing Station at Rumkhapalong.

South-East Asia Command

The XV Indian Corps assumed command of all operations in the Arakan sector.

Following the Qubec Conference in August 1943 a new command called the South-East Asia Command (SEAC) was constituted to conduct all operations against the Japanese in the South East-Asia region. Lord Louis Mountbatten was appointed Supreme Allied Commander in this theatre. The command included Ceylon, Burma, Malaya, Sumatra and Siam and the Northern Indian Ocean. The region east of the river Brahmaputra which was up till now under the India Command also passed to the South-East Asia Command which took over control of all operations in this theatre from midnight 15/16 November. The forces of the new command were to be largely based on India and maintained and supplied by the India Command. The Eleventh Army Group which had under command all British and Indian land forces in this theatre came under the new command. Within the Eleventh Army Group was the Fourteenth Army responsible for operations in Burma. This army consisted of the IV, XV and XXXIII Corps.

On 1 November, XV Indian Corps assumed operational control of the Arakan area south of Chittagong. Two Indian divisions, namely the 5th and 7th Indian Divisions, and the 81st West African Division were allotted to this Corps for the ensuing operations. By the beginning of November troops of the 5th Indian Division had started to come in and assume responsibility for the coastal plain and western slope and crest of the Mayu range. The whole of the 7th Indian Division relieved of its commitments west of the Mayu range by the 5th Indian Division concentrated east of the range and was ready for a limited advance forward.

During the month of November, projects were undertaken to improve the lines of communication. With the deployment of a whole division to

the east of the Mayu range a more substantial lateral line of communication other than the trails which wound through the passes of the range became an urgent necessity. Construction of road through the Ngakyedauk pass was undertaken and completed in record time. In addition, bridges and air strips were also constructed.

The immediate operational policy in Arakan, at the time, was to retain the initiative in minor actions only and not to get committed to any major operations until the concentration of all the three divisions was completed. During the previous campaign in Arakan the Japanese had fully exploited the weakness of the Allied left flank and after breaking through that flank had disrupted the main forces east of the Kalpanzin and in the Mayu peninsula. To guard fully against such a contingency the 81st West African Division was placed in the Kaladan valley. The task assigned to this division was three fold; protection of the flank of the main force (5th and 7th Indian Division), to make a diversion to the main thrust, to draw off as many Japanese as possible and to threaten the flank of the Japanese in the Mayu valley. The West African Division began concentrating in Chiranga south of Dohazari in early December 1943.

On the night of 30 Nov/1 Dec, troops of the 7th Indian Division began a two pronged advance southwards east of the Mayu range. The 33rd Brigade columns crossed Ngakyedauk Chaung and occupied the area extending from the village of Ngakyedauk to the ridge about 1½ miles to the north-west of Sinohbyin village. By 3 December it had extended its area to the hills overlooking Maungyithtaung and Sinohbyin. While these operations were in progress the 89th Brigade pushed forward down Tatmin Chaung and established forward positions on the hills south of the chaung, one mile west of Tatmingyaungywa. As a result of these operations the 7th Indian Division came in close contact with the main Japanese defences, from the summit of the Mayu range to the foot hills of Arakan Yomas.

No major developments occurred during the month of December mainly due to the fact that both the divisions had instructions only to maintain close contact with the Japanese forces on the general line Maungdaw-Razabil-Letwedet and thence east to the river Kalapazin and not to get involved in any major fighting until the end of the month. The Japanese too were on the defensive during this period. Nevertheless patrol activities and infiltration on a minor scale continued unabated during the whole period. By the end of December, the dispositions had been completed, with both divisions holding almost a continuous line from the sea to Arakan Yomas over the Mayu range. The stage was set for a major offensive.

The medical units were deficient in personnel and equipment at the beginning of this period but gradually the situation improved and by the third week of December the forward and rear medical units of XV Indian Corps were situated as follows:—

36th Indian Infantry Brigade Group (from 26th Indian Division)

16 Ind Fd Amb Tp Cl 1

1 Ind Fd Amb

Cox's Bazar

Cox's Bazar

5th Indian Division

10 Ind Fd Amb

45 Ind Fd Amb—Maunghnama

75 Ind Fd Amb—Nawapara

7 Ind Fd Hyg Sec—Sabargon
South*7th Indian Division*

44 Ind Fd Amb—Goppe Bazar

54 Ind Fd Amb—Badana Sampan-
head66 Ind Fd Amb—Ngakyedauk Pass
(West end)

32 Ind Fd Hyg Sec—Laung Chaung

*XV Indian Corps**Dechuapalong*

HQ Medical XV Ind Corps

Bawls North

15 Ind CCS

7 Ind Mob Surg Unit

81 Ind Mob X-Ray Unit

43 Ind Sub Depot Med. Stores

Dhoapalong

8 Ind CCS

25 Ind CCS

12 Ind Mob Surg Unit

28 Fd Transfusion Unit

16 & 80 Ind Mob X-Ray Units

55 Ind Fd Hyg Section

42 Ind Sub Depot Med Stores

Cox's Bazar

1 Ind Bearer Coy

37 ISS (COMB)

15 Ind Mob X-Ray Unit

18 Ind Dental Mech Unit

Garrets Gardden

2 Ind Bearer Coy

Chiranga

50 ISS (Comb)

Tumbru

42 ISS (Comb)

46 ISS (Comb)

38 Ind Anti Mal Unit

Flat Penner

Six hospital creek vessels

Laung Chaung

51 Anti Mal Unit

Badana Sampanhead

8 Ind Mob Surg Unit.

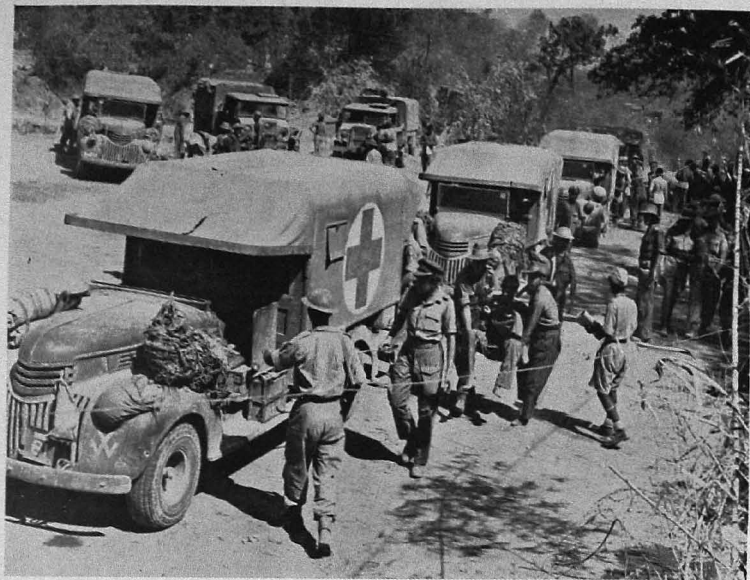
As a prelude to the main operations and to neutralise the forward positions held by the Japanese to the west of the Mayu range the 5th Indian Division launched an attack on the night of 30/31 December. The 161st Indian Infantry Brigade moved to the high ground to the north-east of Bakkagona about five miles to the north of Razabil. The next morning troops of the brigade attacked a strong position (Pt. 124) held by the Japanese in this area. Considerable opposition was met from light machine-gun fire from bunker positions and the attack was held up. By 1030 hours eighty-three casualties had been collected by unit stretcher bearers at the RAP at Kwelabinga. A car post had been opened at Zeganbyin. Six stretcher bearer squads under cover of artillery concentration moved forward from the car post fording the chaung, waist deep in water and evacuated the casualties. Sniping and machine-gun fire persisted at the chaung crossing and it was decided to evacuate the remaining casualties in the night. Medical equipment was brought up by returning stretcher bearers and an additional RAP was opened in the forward area. The remaining cases were evacuated during the night. One stretcher bearer was wounded and another killed by a sniper. As the number of the casualties and difficulties of their evacuation increased, further medical equipment, stretchers and



Carrying the wounded for medical aid on the Arakan Front, January 1944.



Evacuation of wounded by boat in Arakan, February 1944.



Evacuation of wounded from the 7th Indian Division in Arakan, February 1944.



Front-line dental surgery at Kaladan,
November 1944.

blankets were dumped at the RAP 4/7 Rajput to enable it to hold cases, and another ADS was opened at MR 349441. By 4 January, sappers had also completed a jeep track from Zeganbyin to Nawrondaung and made the rapid evacuation of casualties possible. Subsequently the troops of the brigade advanced successfully south and took over feature 141 area. By 10 January, the ADS also had moved forward to 'Bakkagona' area. Casualties in the forward area were then evacuated by sampans and stretcher bearers to ADS Bakkagona. Then the ADSs, both of 'A' and 'B' Coys, evacuated them by ambulance cars to MDS 10 Indian Field Ambulance at Chota Maunghnama.

All efforts to reduce point 124 by frontal attacks proved unavailing. The troops were, therefore, sent around the position and by 8 January 1944 the Japanese on 'Point 124' had been completely surrounded. After completing the encirclement of 'point 124' and 'point 141', north of Razabil, the troops of the 5th Indian Division pushed on towards Maungdaw and occupied it on 9 January 1944. No 10 Indian Field Ambulance accompanied the troops advancing towards Maungdaw and opened an ADS (Dett 'B' Coy) at the foot of Ngakyedauk Pass. 'B' Coy (less dett) had accompanied the brigade to Maungdaw and opened an ADS there on 12 January. A car post was established at Aminpara. The MDS remained open at Chota Maunghnama up to 26 January when it was moved to MS 125 Bawli-Razabil Road. Casualties were evacuated to the MDS by the Naf river. The Japanese had withdrawn but they still continued to hold the strong line of defence extending from Razabil fortress to 'point 731' on the Mayu range.

The Japanese had turned the area around the 'Tunnels' through which the main road passed into a strong fortress covered by two buttresses, Razabil on the west and Letwedet on the east. These strong points had to be breached before the Maungdaw-Buthidaung line could be reduced. The 5th Indian Division was assigned the task of capturing Razabil whilst the 7th Indian Division was to take Buthidaung. The 81st West African Division in the Kaladan valley was to advance down the river Kaladan to cut the lateral line of communication of the Japanese forces.

Considering the general situation and importance of the Razabil crossroads it was finally decided to reduce the Razabil fortress by an 'all out attack'. For this operation a number of additional units were placed under command of the 5th Indian Division and the attack was scheduled to commence on 26 January. The front line troops facing the Razabil fortress were withdrawn on that day to a thousand yards behind to enable the heavy bombers to drop their loads on the Japanese positions. A total of ninety tons of explosives including some 2,000 lbs. bombs was dropped. As the last bombs fell tanks hidden in the gardens of plantain trees went forward and took up strategic positions on the right flank of the Japanese fortress from where they fired into the Japanese bunker defences. The 4th Rajput crept forward under a heavy barrage supported by mortars and medium and light machine guns. Concentrated machine-gun and grenade fire from the Japanese position, however, prevented the troops from reaching the top of the hill but they succeeded in establishing

themselves on the lower slopes. The attack was resumed the next day but met with indifferent success. Razabil itself was heavily defended and little headway was made against determined Japanese opposition.

During these operations 'A' Coy 75 Indian Field Ambulance opened an ADS to the south of Bakkagona (at MR 355424) and was responsible for moving all casualties from RAPs west of Bawli road. A car post and a WWCP were opened about a mile to the south of the ADS (at MR 35841) immediately after the bombing of Razabil fortress was over. B Coy 75 Indian Field Ambulance opened an ADS to the north-west of Bakkagona (at MR 374439) and was responsible for the evacuation of all casualties from RAPs located east of the road. HQ Coy had also opened an ADS at the same site. Casualties were evacuated to ADSs by hand carriage and from ADS 'A' Coy to MDS 45 Indian Field Ambulance located to the east of Zeganbyin (MR 373465) and thence to 23 Casualty Clearing Section located near Chota Maunghnama by ambulance cars. The ADS 'B' Coy evacuated the sick and wounded by creek steamers to Tambru Ghat.

The bombing had caused a number of civilian casualties. 'A' Coy of the 75 Indian Field Ambulance was engaged for a day in attending these casualties.

During January, ADSs of No 75 Indian Field Ambulance evacuated 258 battle casualties and 259 sick. About 60 per cent of the battle casualties were wounds caused by small arms and the remainder by machine-gun and rifle bullets. The number of stretcher cases was not high except in the battle for Pt. 124 on 31 January when approximately 50 per cent were lying cases.

While the Rajputs were attacking Razabil the Suffolks and Dogras were sweeping the area between Bawli road and Pt. 73 on the range. For this attack the surgical elements of both the Coys of No. 45 Indian Field Ambulance moved forward to car posts, 'B' Coy behind the RAP of the 17 Dogra and 'A' Coy behind the 2 Suffolks. These companies returned each night leaving one ambulance car at each post. With each of the RAPs were attached twenty stretcher bearers to carry the wounded to the car posts, from where casualties were moved to the MDS and thence by ambulance cars to 23 Casualty Clearing Station in the Chota Maunghnama area. During the fighting one of the RAPs had moved forward. The casualties from this post were carried by stretcher bearers to a jeep post and thence by jeep to ADS 10 Indian Field Ambulance at the foot of Ngakyedauk Pass and from there to casualty clearing station at Chota Munghnama.

The operations of the 7th Indian Division to the east of the Mayu range did not meet with any considerable success. The 33rd Indian Infantry Brigade captured a few tactical features in its sector. The operations of the 114th Indian Infantry Brigade were, however, more successful. Assigned to the task of outflanking Buthidaung the brigade fought a few brisk actions against the stiff opposition put up by the Japanese forces. On 16 January, troops of this brigade captured the Taungdaungywa feature against considerable opposition and held it against successive counter-attacks. Meanwhile, 4/5 Gurkha side stepping

these features to the east advanced southwards towards the highground about $2\frac{1}{2}$ miles to the south of the feature. They soon came in contact with a considerable force of Japanese and brisk fighting ensued resulting in the withdrawal of the Japanese. Opposition stiffened to further advance but the advance continued. In the centre of the brigade sector also considerable progress was made and by 15 January advance elements of the brigade were within a mile of the Maungdaw-Buthidaung Road. Thus by the middle of January 1944, the stage was set for an all out attack on Buthidaung and elimination of all Japanese forces located to the north of the road. The 5th Indian Division had already captured Maungdaw and on sectors the Corps was within reach of the main road. But the Razabil fortress and the Tunnels area were still holding out.

By the end of January, it had become abundantly clear that the Japanese had organised the Tunnels area as a fortress with Razabil as its main bastion. General Christison, therefore, decided to shift the axis of advance from the west to the east of the Mayu range. The object of the operations, newly planned, was to encircle and destroy the elements of the 143 Japanese Regiment then holding the line Letwedet-Buthidaung. The stage was now set for an attack on the Japanese east of the range but at that very moment the Japanese started their counter-offensive.

CHAPTER XIX

Japanese Counter-Offensive

By the end of January 1944, good progress had been made in the sectors held by the two Indian divisions and it was decided to shift the main weight of attack to the sector held by the 7th Indian Division east of the Mayu range. However, during this whole period the possibility of Japanese counterstroke was also kept in view. Towards the end of January, it was fairly certain judging from the accumulated information that a Japanese attack was imminent but the size of the forces employed by the Japanese came as a surprise. In pursuance of the decision to shift the axis of advance to the east, the 9th Indian Infantry Brigade (5th Indian Division) was instructed to move to the east. On the night of 2/3 February, the 9th Indian Infantry Brigade relieved the 89th Indian Infantry Brigade which then moved into reserve.

The general plan of the Japanese attack was to outflank the 7th Indian Division to the east and cut the line of communication to the north and encircle and annihilate the Indian and British forces. The 55th Japanese Division with supporting troops was allotted this task. The available forces were organised into three main groups viz. the Tanahashi force, the Kubo force and the DOI force. The spearhead of attack was to be the Tanahashi force which was to move up the left flank of the 7th Indian Division, capture Taung Bazar from the rear and cut the Ngakyedauk pass and trap the division east of the Mayu range. The Kubo force was to reach the Goppe Bazar, push over the pass and cross the high ranges and cut the Bawli road near Maungnama. The DOI force was to hold the Maungdaw-Buthidaung line and attack towards the north. It was anticipated by the Japanese that the 7th Indian Division could be annihilated whilst attempting to escape across the Mayu range and later the task forces could combine to crush the 5th Indian Division.

The Japanese forces commenced their advance on the evening of 3 February and by the next morning the advance elements had reached the vicinity of Taung Bazar. The force encountered no appreciable resistance and secured the area round the river Kalapanzin in this sector and crossed the river and commenced to advance west and south-west.

As the Japanese offensive gained momentum steps were being taken by the Allied forces to meet the threat. The 25th Indian Division undergoing training in the Chittagong area was instructed to proceed to Arakan and the 36th Indian Division at Calcutta was ordered to follow up. Immediate redistribution of available forces in the Arakan was carried out. The 89th Indian Infantry Brigade which was in reserve was brought forward again.

The Japanese offensive proceeded according to plan up to midday 5 February. In the evening of 5 February, the Japanese forces rapidly pushing southwards towards Sinzweya (the Administrative base of the 7th Indian Division) met with stiff resistance from the troops of the 89th

Indian Infantry Brigade in the region of Ingyaung. Waves of determined attacks by the Japanese troops were held and repulsed. Throughout 5 and 6 February, the positions held by the troops of the 89th Indian Infantry Brigade were maintained and this defence prevented a large portion of Tanahashi force pushing rapidly to the south. The resistance put up by this brigade acted as a defence screen to the rear of the 7th Indian Division. To deny all approaches was impossible but the operations of the brigade upset the schedule of the Japanese forces and contributed to their eventual defeat.

Meanwhile, at 0500 hours on 6 February, the Japanese troops which had managed to infiltrate to the south launched an attack on the Headquarters 7th Indian Division in the area of Laungchaung. The Headquarters personnel put up a stiff resistance but aided by a thick mist the Japanese infiltrated into the Headquarters area despite earlier reverses. Heavy fighting ensued but by 0900 hours it became evident that the Headquarters area could not be held with the improvised troops. The personnel were split into groups and these made their way out by infiltrating through the infiltrators and reached the Administrative Base at Sinzweya. The General Officer Commanding of the division slipped out along with one of the groups and on arrival at Sinzweya established his headquarters.

The Administrative base where the headquarters was now established was an open area of paddy fields surrounded by hills and the Japanese in their initial onslaught had occupied a few of these features. This base which came to be known as the 'Admin Box' originally contained only a few scores of troops which swelled up to a few thousands comprising troops from all arms of services. The regular defence forces in the beginning consisted only of two battalions and supporting troops.

The unexpected resistance on the part of the Allied forces had upset the progress of the Japanese attack. The Kubo force which had advanced further to the north before turning west to cut off the 5th Indian Division did not meet with any considerable success and had to limit the scope of its operations. On 6 February, heavy attacks were launched by the Japanese forces in the south on the sector held by the 33rd Indian Infantry Brigade in order to link up with the Tanahashi force in order to complete the ring round the 7th Indian Division. Even though the main positions were held contact was established between the two arms of the Japanese forces largely by infiltration tactics on the night of 6/7 February. On the morning of 7 February, the Japanese troops of the Kubo and Tanahashi forces linked up. The box was now surrounded and the siege commenced.

The troops of the 7th Indian Division now formed themselves into a series of boxes located as follows:—

Divisional Administrative Base	..	.. Sinzweya
114th Indian Infantry Brigade	..	.. Kwazon
33rd Indian Infantry Brigade	..	.. North-west of Buthidaung

7 Indian Field Regiment	} Awlanbyin.
One troop 86 Light Anti-Aircraft Battery	
One Coy of 1/11 Sikh	
One Coy of 7/2 Punjab	
One Pioneer Coy and rear wagon lines of 25 Indian Mountain Regiment	

Instructions were issued that there would be no withdrawal but that troops would dig in and hold the positions they were occupying. All supplies were to be brought by air and during the succeeding days the division was wholly supplied by air.

On the day the Japanese offensive commenced (4 February) the medical units in the 7th Indian Division area were located as follows:—

- | | |
|---|--|
| (1) East of Ngakyedauk Pass .. | MDS 66 Field Amb
12 Mobile Surg Unit
48 Indian Dental Unit
28 Blood Trans Unit |
| (2) South of Junction of Ngakye-
dauk Chaung and Kalapanzin
river | MDS 54 Ind Fd Amb
8 Mobile Surg Unit
HQ 44 Ind Fd Amb (Closed) |
| (3) 33rd Indian Infantry Brigade
Area | ADS 44 Ind Fd Amb
1 Platoon two Indian Bearer
Company
15 Indian Ambulance Troops |
| (4) 89th Indian Infantry Brigade
Area | ADS 66 Ind Fd Amb
1 Platoon 2 Bearer Company
15 Fd Amb Troop |
| (5) 114th Indian Infantry Brigade
Area | ADS 54 Ind Fd Amb
(Kwazon)
ADS 54 Ind Fd Amb (Ohtaung)
Detachment 54 Ind Fd Amb
(Sampanhead)
13 Fd Amb Troops
1 Platoon 2 Bearer Company |
| (6) Taung Bazar | 42 ISS |
| (7) Laung Chaung | ADMS 7th Ind Div
HQ 33 Fd Hyg Sec
HQ 51 Ind Anti-Mal Unit
HQ 2 Ind Bearer Coy. |

Both the main dressing stations (Nos 66 and 54 Indian Field Ambulances) were capable of holding 300 cases each and were running forward malaria treatment centres. Casualties were evacuated to the main dressing station 54 Indian Field Ambulance by stretcher bearers, jeeps, ambulances and sampans. The casualties were later evacuated by sampans to Taung Bazar or by air to Comilla or by ambulance cars to main dressing station No 66 Indian Field Ambulance. The latter evacuated the sick and wounded by ambulance cars to No 15 Casualty Clearing Station at Bawli Bazar.

The first medical unit affected by the Japanese advance was

No 42 Indian Staging Section. The officer commanding the Indian staging section was wounded but he managed to escape; two men of the unit were killed. On the morning of 5 February, all walking cases were marched to main dressing station 54 Indian Field Ambulance. A detachment from No 54 Indian Field Ambulance was sent to reinforce advance dressing station at Kwazon.

The Japanese were rapidly advancing to capture the pass. Every form of transport was, therefore, pressed into use to evacuate as many casualties as possible from the main dressing stations over the Pass to No 15 Indian Casualty Clearing Station Bawli. On the morning of 7 February, the Ngakyedauk Pass was cut. The medical units withdrew to the 'Admin Box' at Sinzweya. No 44 Indian Field Ambulance already lost many of its personnel and being closed was safely and quickly withdrawn, but the road was blocked by the Japanese before Nos 54 Indian Field Ambulance and 8 Mobile Surgical Unit could retire. The surgical unit succeeded in filtering to the Admin Box on foot without its equipment.

On the evening of 6 February, the medical arrangements within the 7th Indian Division Box were as follows:—

The main dressing stations of Nos 44 and 54 Indian Field Ambulance occupied a site under canvas which had previously been a canteen, 200 yards to the north of main dressing station of No 66 Indian Field Ambulance and separated from that unit by the Ngakyedauk Chaung. The main dressing station 66 Indian Field Ambulance with No 12 Mobile Surgical Unit was functioning as a shady jungle hospital. It was situated on the south-eastern slope of a small feature known as the main dressing station hill. The site had been chosen with a view to cover from air bombing. Three dry nullahs were utilised and by deepening these an excellent site was made available. The wards, operation theatre and resuscitation centre were underground and thick jungle screened the area. Its real weakness was from the ground for the southern extremity of the nullah lay outside the perimeter defences and passed blindly into the dense jungle. No 12 Mobile Surgical Unit, 48 Indian Dental Unit, and 28 Blood Transfusion Unit were also located in the main dressing station area.

Anticipating Japanese infiltration into the main dressing station area the defences were organised and the final arrangements were as follows:—

- (a) A section of the 2nd West Yorks (9th Indian Infantry Brigade) with a brengun was posted at the junction of three nullahs south of the main dressing station site.
- (b) Officer Commanding No 2 Bearer Company with three ambulance sepoys armed with rifles were posted at the south entrance of the nullah.
- (c) The west of the nullah was guarded by Rear Division Headquarters.
- (d) Along the north bank odd parties of the 2nd KOSB (89th Indian Infantry Brigade) sapper etc. were in position.

- (c) All walking, sick and wounded were transferred to the nullah north of the main dressing station hill. By the evening only thirty casualties had remained in the main dressing station area most of whom were too ill to be moved.
- (f) All malaria convalescent British other ranks were armed with rifles and a roving patrol of volunteers was posted near the office.

Officer Commanding No 54 Indian Field Ambulance was put in command of main dressing station defences. The Assistant Director of Medical Services had taken up his position in a slit trench near at hand and the other medical officers took their positions in different parts of the main dressing station.

In spite of all the precautions enforced a party of Japanese troops succeeded in infiltrating into the area of the main dressing station, 66 Indian Field Ambulance during the night of 7/8 February. The Japanese troops entered the main dressing station area at about 1930 hours on 7 February. The commanding officer and another medical officer managed to escape and inform the command post as well as the Divisional Headquarters of the presence of Japanese forces in the main dressing station. A party of troops from the 2 West Yorks was sent to the main dressing station area to retrieve the situation but a shower of grenades forced them to retire. In view of the lack of reserves the counter-attack had to be postponed till the next morning.

In the meanwhile, the Japanese forces had rounded up about thirty prisoners including medical officers and commenced looting and wanton destruction of the equipment of the main dressing station. The medical officers were then produced before an officer whom the Japanese troops called 'General' who asked them about the details of the strength of the forces and their deployment. On their refusal the prisoners were taken to the stores and asked to pack up the looted material. Later they were taken to a nullah and kept under guard.

On the morning of 8 February, the counter-attack on the Japanese troops holding the main dressing station area was launched. The Japanese used the prisoners as a screen against the counter-attack and some of the prisoners were badly injured. They were left uncared for. By the evening of 8 February, the position of the Japanese in the main dressing station area was becoming rapidly untenable. The Japanese lined up the prisoners and shot the British other ranks first and later the Indian other ranks. The doctors' turn came next but one medical officer (Lieut. S. N. Basu) miraculously escaped. He was stunned and fell down but the bullets had missed him. Realising that he had a chance of escape he smeared himself with blood and rolled into a trench. He walked out of the trench next day when the main dressing station area was cleared.

By midday on 8 February, casualties began coming in from the fighting in the main dressing station area. With the personnel available an improvised main dressing station was established by 66 Indian Field Ambulance in the nullah to the north of the Queens Ridge where the

walking wounded had been sheltering since the previous evening. There was no equipment and essential personnel had been lost. Main dressing stations, 44 and 54 Indian Field Ambulance were in the vicinity, the former with most of its equipment minus most of its important personnel and the latter with some essential personnel and no equipment. All available resources were pooled under instructions from the Assistant Director of Medical Services and a combined main dressing station was formed to the north of the main dressing station hill which functioned throughout the siege. The Officer Commanding 66 Indian Field Ambulance was appointed Senior Executive Medical Officer of the 'Admin Box' and the Officer Commanding of 54 Indian Field Ambulance took over the main dressing station. A surgical centre was established by two surviving surgeons in a basha nearby.

The former main dressing station area of the 66 Indian Field Ambulance was cleared on the morning of 9 February. The area on recapture presented a gruesome sight. It was strewn with the dead and dying, papers, books, equipment, empty panniers and disembowelled Yakdons. Patients were bayoneted in their beds and two doctors had their stethoscopes draped round their necks when they fell.

The siege of the 'Admin Box' now commenced in right earnest. The Japanese launched incessant determined attacks on Allied positions in the Sinzweya-Ngakyedauk area but they achieved no appreciable success. The Japanese troops in some instances managed to fight their way to vital hill features at the edge of the 'box' but each time they were thrown back with heavy losses. The 'box' itself had taken on a new appearance. The dense jungle-clad hills were bereft of all foliage and burned out stumps of trees alone remained. The Kubo force had virtually spent itself and held on desperately to its positions but undertook no further large scale operations. From the time the siege commenced until 24 February when it was lifted troops were supplied wholly by air. Every available aircraft was mustered to discharge this task and at no time was the supply position in the 'Box' critical. Though besieged the 7th Indian Division was at no time isolated.

By 12 February, the initiative was passing into Allied hands. The Japanese were now isolated and were holding positions which could be, if at all, supplied only with difficulty. The idea of using captured supplies on which the Japanese offensive was to depend after the first ten days had misfired miserably. The 7th Indian Division was now instructed to take up the offensive.

By the middle of February, two brigades of the 26th Indian Division were pushing steadily southwards, the 71st Brigade to secure the Taung area to establish contact with the 114th Brigade (7th Indian Division) west of Kalpanzin, and the 4th Brigade along the eastern foothills of the Mayu range to destroy the Japanese forces entrenched in that area and to re-establish contact with the 7th Division 'Admin Box'. The 29th Brigade of the 26th Indian Division had arrived and relieved the 36th Brigade of the responsibility for the protection of Bawli Bazar. The 36th Brigade began attacking the Japanese in the foothills of the Mayu range. The 123rd Brigade (5th Indian Division) reinforced by a battalion

of the 26th Division, was fighting its way through Ngakyedauk Pass from the western end. During the next few days operation on all sectors continued slowly.

The Japanese forces despite their reverses held on to their positions grimly and even achieved some tactical gains. On the evening of 14 February, they captured point 1070 a commanding feature on the Ngakyedauk Pass. However, no serious difficulties were caused by this gain as the troops pushing along the pass bypassed the feature. In the meanwhile, the 4th Indian Infantry Brigade advancing south towards the 'Admin Box' reached point 315, a high feature to the north of the Box which had been held by the Japanese and had proved a constant source of trouble. All efforts to capture this point proved unsuccessful for the time being.

The fighting continued during the following days with unabated vigour. On 20 February, the advanced troops of the 5th Indian Division recaptured point 1070 and secured their flank in their advance to link up with the 'Admin Box'. By the beginning of the third week of February, it was evident that the Japanese offensive was on the verge of collapse. Reports began to come in of large scale withdrawal of Japanese troops. On 23 February, the troops of 5th Indian Division linked up with the advanced elements of the 'Admin Box' and the three week siege was lifted. The new technique of staying put when surrounded had been tested and proved feasible. The Japanese had suffered their first major defeat in this theatre. Further operations in this sector resolved itself into large scale mopping up of Japanese groups.

While the battle for the 'Admin Box' was taking place the 33rd and 114th Indian Infantry Brigades had also as mentioned earlier formed defensive areas. These brigade 'Boxes' were also supplied by air. Frequent offensive operations were conducted by both brigades resulting in considerable losses to the Japanese forces. The 89th Indian Infantry Brigade moved to the 'Admin Box' on February and thereafter formed part of that force.

Out of a total number of 7,000-8,000 Japanese soldiers, hardly 2,000 escaped unscathed. A total of 4,500 dead was actually counted which increased to 6,000 in the later operations which ended when the monsoon broke out in June.

On the other side a total of over 1,000 wounded alone was treated during the period (724 in combined main dressing station and 280 at advanced dressing stations). Out of 724 admitted to the main dressing station, 189 were returned to their units as fit for duty, 42 died and 493 were evacuated over the pass. Out of 280 casualties treated at advance dressing stations, 240 were evacuated by air through the 14th Indian Brigade, the remaining 40 were returned to the units fit for duty. Moreover 25 Japanese wounded were also attended to.

The surgeons operated under the most difficult conditions. On occasions they actually saw casualties occurring a few hundred yards away from the operation theatre. These cases reached the surgeon

within 10 to 15 minutes of being wounded. What was, therefore, medically desirable was made operationally possible. It was not possible to operate at night, for the snipers were holding the vicinity.¹

The medical units suffered the following casualties:—

	<i>Killed</i>	<i>Wounded</i>	<i>Missing</i>	
Officers	6	5	5	(4 later rejoined the units)
BORs	5	1	1	(1 later escaped POW)
IORs	12	16	126	(97 later rejoined units).

Accommodation presented a major problem. Bulldozers had widened the main nullah and accommodation for 300 lying and over 300 sitting cases was provided. Nursing of the patients was exceptionally difficult. The greatest difficulty was in keeping the intravenous drip going and appreciating changes of condition of seriously ill cases in the dark (a total of 120 patients was resuscitated during this period using 500 lbs. of plasma and glucose saline). The divisional medical resources were stretched to capacity. The medical and nursing staff worked day and night. The difficult conditions under which troops were living produced a lack of sanitary discipline. This resulted in an enormous increase of flies. No epidemics, however, occurred during the period. When opportunity came all dead (human and animals) were buried and deep trench fly proof latrines were provided. All ranks were put on suppressive mepacrine with effect from 14 February. Anti-mosquito cream and pyrethrum were also distributed to the units. Mosquito nets could not be used.

At no period was there any shortage of essential medical supplies. 1,626 tons of supplies including medical stores and equipment were dropped by air. All the items dropped, however, did not reach the destination, for example, most of the mepacrine was dropped by mistake in Goppe area.

The 5th Indian Division

It will be recalled that the units of the 5th Indian Division had also concentrated in defended boxes. Nos 45 and 75 Indian Field Ambulances remained with their respective brigades (in the 123rd and

¹ During this period in all 242 operations were performed on 169 cases including the following —

Head and face	..	22
Chest	.	13
Thoraco abdominal	..	2
Abdominal	..	10
Compound fracture arm and hand	.	16
Compound fracture leg and feet	..	41
Major arterial lesions	..	7
Multiple flesh wounds	..	25
Flesh wounds of arms	..	16
Flesh wounds of legs	..	19
Burns	..	10
Major amputations arms	..	5
Major amputations legs	..	8

161st Indian Infantry Brigades 'boxes' respectively). Light section of No 10 Indian Field Ambulance at the foot of Ngakyedauk Pass was brought in the 5th Indian Division 'Box'. Nos. 23 and 25 Indian Casualty Clearing Stations and 71 Indian Field Ambulance with their attached units were ordered to move back to Bawli. On 8 February, No. 71 Indian Field Ambulance was bombed but no damage to personnel occurred. Evacuation of casualties from the east of Ngakyedauk Pass had to be stopped after the road was blocked by the Japanese. A party of Japanese had crossed the Mayu range by the Chota Maunghnama Pass, in order to cut the Bawli road, and raided 25 Dragoon Regimental Group harbour area and had set the casualty clearing station on fire. On the arrival of the troops of the 5th Indian Division the Japanese party disappeared in the hills. Evacuation of casualties to the 15 Casualty Clearing Station was carried out by ambulance cars of 20 Motor Ambulance Convoy. 'B' Coy of No 10 Indian Field Ambulance on the east of the Mayu range with the 9th Indian Infantry Brigade had a trying time from 5 to 11 February. On 8 February, the Field Ambulance Company had been ordered to go into the 9th Indian Infantry Brigade 'Box' but could not do so in time as the road was not motorable due to heavy rain. The Company commander and his men dug themselves in outside the 7th Indian Division 'Admin Box'. The Japanese attacked their position a couple of times. However, their loss in men and material was negligible. On 9 February, the Field Ambulance Company contacted the brigade and settled down in the perimeter of the 'Admin Box'. After the reorganisation of the brigade areas the medical units of the 5th Indian Division were given the following tasks:—

No 45 Indian Field Ambulance with 123rd Brigade evacuated casualties from the hills of Ngakyedauk Pass and south. No 75 Indian Field Ambulance evacuated cases from the division front in the south astride the Waybin-Razabil-Maungdaw road. No 72 Field Ambulance troops were lent to No 71 Indian Field Ambulance for evacuation of casualties over the Goppe Pass.

On 24 February, the Ngakyedauk Pass was reopened. A convoy of armoured cars escorting ambulance cars proceeded from west to east. Lying cases in ambulance cars and sitting cases in other vehicles were evacuated from the main dressing station, 66 Indian Field Ambulance in the 7th Indian Division 'Admin Box' to main dressing station, 45 Indian Field Ambulance. The latter evacuated them to No 15 Indian Casualty Clearing Station Bawli.

81st West African Division in Arakan

While events were moving fast east and west of the Mayu range, the 81st West African Division was busy in the Kaladan valley. The possible danger of Japanese diversion, across the apparently impassable Kaladan ranges to cut the Allied main lines of communications in Arakan, was fully realised by General Christison. In the middle of December 1943, the advance brigade followed by the divisional headquarters and other brigades of the 81st West African Division were concentrated in the Daletwe-Satpaung area in the upper reaches of the river Kaladan. The

division was reinforced by 7/16 Punjab, 5th Mahratta and an East African battalion. The role assigned to the two Indian battalions was to protect the rear of the division and the East African battalion was to operate on the left flank. The objects of this and following operations were (i) to cut the Japanese lines of communication between the Kaladan and Kalapanzin valleys and (ii) to threaten the flank of the Japanese force poised for the offensive.

Before the middle of February, the advance troops of the division had reached the outskirts of Kaladan village. On 10 and 12 February, two unsuccessful attacks were made on Japanese strong points. The Japanese positions around Kaladan village, therefore, had to be by-passed. These tactics succeeded and the Japanese evacuated the village and began to withdraw southwards. On 25 February, the West Africans crossed the Pichaung just short of its confluence with the Kaladan river and overcoming slight opposition occupied Kyauktaw. The main effort was then directed towards the capture of Kanzaik to threaten Japanese lines of communication. During the night of 1/2 March, a Japanese force which was holding the West African Division troops frontally on the Myohaung road moved round south of Thayettabain, and captured Pagoda Hill opposite Kyauktaw by 3 March. The Japanese then crossed the Kaladan river and occupied the area between Pichaung and Kaladan river. West African troops had to take up new positions in the area west of Pichaung. On 10 April, the whole of the 81st West African Division less one West African battalion and 7/16 Punjab marched straight through the Japanese line across the Kaladan ranges and arrived in the Kalapanzin valley, south of Taung Bazar. The two battalions left behind were to fight and harass the Japanese and were also to give the impression that the entire West African force was operating in the Kaladan valley.

A Japanese advance in Kaladan valley began in April. By 3 May, the Japanese force was reported astride the Kaladan river. The Indian and West African troops withdrew westwards and occupied Mowdok whilst the Japanese occupied Labaw to the south. During the last week of May, Japanese patrols had crossed the Indo-Burma border and engaged the position covering Mowdok. Japanese activities in the upper Kaladan valley continued for a long time and at one time it was apprehended that it might make a bid for the Allied lines of communications in Arakan. The monsoon had nearly set in and it was unlikely that the Japanese would launch a serious attack at that time. However, to meet any unforeseen situation one brigade of the 81st West African Division was withdrawn from the Kalapanzin valley and held in readiness in Chiranga. After a few days the brigade was moved into the upper Kaladan valley but by that time any immediate Japanese threat could be discounted.

The medical resources of the 81st West African Division consisted of the following:—

No 3 West African Field Ambulance, 3 West African Field Hygiene Section and 27 West African Casualty Clearing Station with the 3rd West African Infantry Brigade; No 5 West African Field Ambulance, 5 West African Field Hygiene Section and 31 West African Casualty

Clearing Station with the 5th West African Infantry Brigade, and Nos 6 West African Field Ambulance, 6 West African Field Hygiene Section and 28 West African Casualty Clearing Station with the 6th West African Infantry Brigade.

It may be added here that the composition of West African medical units differed from the Indian and British units in some respects. The West African Field Ambulance was composed of a headquarter company and three Bearer companies. A surgical team consisting of a graded surgeon, Other Ranks Assistant, British non commissioned officer and four trained African nursing officers was formed in the Headquarters company to be attached as and when required to the Bearer companies. The headquarters company had dental officer, clerk orderly, and an African other rank also. The bearer companies were divided into headquarters and two bearer sections each with an officer-in-charge. Clerks, cooks, sanitary and water duty men formed part of the headquarters section and the bearer sections consisted of four stretcher bearer squads each, two nursing officers and one African non commissioned officer. Thus a part of a company could be attached to an infantry battalion to assist the evacuation of casualties to the advance dressing station or to augment the regimental stretcher bearers. Stores and equipment were divided into different loads and were carried on the head by auxiliary group personnel, and also by unit personnel. Thirty-four auxiliary group personnel were allotted to a bearer company; each one carried approximately a load of 40 lbs. Seven persons out of these thirty were used for carrying one day's ration. No definite number of auxiliary group personnel was allotted to the headquarters company since its loads varied from 150 to over 250 lbs according to the amount of stores in reserve, number of rations for the unit personnel and casualty surplus kit etc. When a headquarter company had to move the number of 'loads' were given to Adjutant Quartermaster Brigade who made the arrangements to allot auxiliary group personnel (or rafts or mechanical transport if available) to carry the stores.

The 3rd West African Infantry Brigade along with its attached Casualty Clearing Station, Field Ambulance and Field Hygiene Section had been detached from the division and had joined the 3rd Indian Division (Special Force). The remaining brigades had concentrated at Chiranga. The advanced elements of the 6th West African Infantry Brigade with No 6 West African Field Ambulance had left Chiranga on 7 December 1943 and proceeded to Satpaung. They were followed at intervals by other units of the brigade. The route was long and arduous, through about ninety miles of mountains and jungle. The units advancing towards Kaladan also had to prepare a jeep track from Chiranga to Kaladan. There being no facilities for lines of communication the treatment and evacuation of casualties had to be carried out by the divisional field ambulances who dropped off small staging posts (often consisting of only a British non commissioned officer, nursing orderly and a few African other ranks) on the route.

Evacuation of casualties was extremely difficult. Some portions of the route were virtually impassable to stretcher parties carrying patients.

All casualties occurring west of Renoungpara were, therefore, carried back to Champatali, a distance of some thirty miles and thence by porters to an Indian Staging Section at Chiranga. Cases occurring east of Renoungpara were carried forward to Singpa approximately twenty miles and from there by porters to an advance dressing station at Mowdok. From Mowdok these cases were evacuated by porters down the river Sangu, a journey of five days to Bandarban and thence by ambulance cars to Patiya, and then to a West African Casualty Clearing Station. As the troops advanced forward of Mowdok to Satpaung on the Kaladan river the casualties could not be evacuated as the country between Satpaung and Mowdok was impassable for the sick and wounded. An Advance Dressing Station was, therefore, established at Tungnang close to the river Kaladan to hold and treat the casualties. To add to the difficulties further there was an outbreak of cholera. Between 20 December and 2 January 1944, there were seventy-two cases of which forty-four proved fatal.

With the commencement of the southward advance the Advance Dressing Station at Tungnang became semi-static, as owing to the difficult terrain patients could not be evacuated to Mowdok until they were fit to return to duty. Casualties occurring south were sent by porters or raft to Galetne, then by stretcher carriage (about one mile) to Tungnang.

On the arrival of the main body of the division at Milawa (near Paletwa) a Main Dressing Station was formed which later moved two miles south to Pinchaung. Casualties were now evacuated by river Kaladan to Tungnang and by stretcher carriage over the mountains to Mowdok and then by river Sangu to Bandarban, and thence by Motor Ambulance Convoy to General Hospital. A landing strip suitable for Fox Moth aircraft was constructed at Khonwei, within a mile of the Main Dressing Station. After the landing strip was ready casualties were evacuated by air direct to rear hospitals.

As the advance proceeded large landing strips capable of operating Dakota D.C. 3 (accommodating 30 casualties) were constructed. A company of a field ambulance was usually established close to the strip for redressing and feeding the wounded received from the forward areas and to load casualties on the aircrafts. While the division remained astride the Kaladan river casualties were carried to the landing strips. The air strips were, therefore, located as close to the river as possible.

The plan of evacuating the casualties remained unchanged even after the troops moved away from the river Kaladan. The strength of the advance dressing stations varied according to the needs of the situation but generally consisted of one company of field ambulance with another company in the same location in reserve. During this period, however, heavy fighting took place and use of airfields was denied by Japanese interference for about two weeks. Consequently the casualties had to be carried every night for about a week.

The division left Kyingri on 28 March to return to Kaladan. Before doing so all kit was drastically reduced to 20 lbs per officer and man and all personnel and equipment considered unnecessary were

sent out. From the medical point of view this involved sending out practically the whole of the headquarters company of both field ambulances, both the hygiene sections, the Deputy Assistant Director of Medical Services, the clerk and practically all office equipment. The medical services of the division were then dependent on the bearer companies and surgical teams of the field ambulance in each brigade. After reaching the Kaladan one of the brigades moved across the river and with it went two companies of No 6 Field Ambulance. From 29 March to 10 April the brigade was involved in small engagements. An airstrip was made at Ngame but it could be kept open only for a short time. Four patients in all were evacuated from this strip. Another strip was made at Kaladan from where sixty patients were evacuated.

On 10 April, the division had started to move out of the Kaladan valley on its way to that of the Kalapanzin. The route was very rough and involved severe climbing and marching. A halt of about ten days was made in the Sangin Chaung area. An airstrip, at Pinhla worked spasmodically and forty-one cases were flown out from this airstrip. Several columns with sick were also able to get through by road to Taung Bazar. On 13 May, the division arrived in Taung Bazar area. The casualties were flown from a Dakota strip in the area. The total number of casualties evacuated during the operations in Kaladan valley was 1,592. Between 21 May and 11 June, the 81st West African Division gradually evacuated Taung Bazar and went in to monsoon quarters at Chiranga. The deployment of a big force in a country without the semblance of a line of communication presented difficult problems of supply and maintenance. The only solution appeared to be the maintenance of the whole force by air. But the places for supply droppings were not easy to find and the distribution amongst troops was a lengthy process. Difficulties of transport were partly met by the construction of rafts. All medical stores like other stores and equipment were supplied by parachute drops throughout the campaign. The method worked well and troops were kept supplied with essential drugs and medical stores.

Monsoon Disposition

The 7th Indian Division left for Assam and the 36th Division which was operating on the Mayu range was withdrawn to India. Only three divisions (25th Indian Division, 26th Indian Division and 81st West African Division) were left in Arakan. The West African division was located at Chiranga by the first week of June. The other two divisions began moving to monsoon headquarters early in May. Monsoon seemed to be late in coming. By the end of the first week of June the opposing forces had withdrawn for respite. Japanese thinned out mainly from the main range and the Kalapanzin. The 26th Division withdrew from Buthidaung to Taung Bazar, Tumbru and Cox's Bazar. The 25th Division moved to Maungdaw.

CHAPTER XX

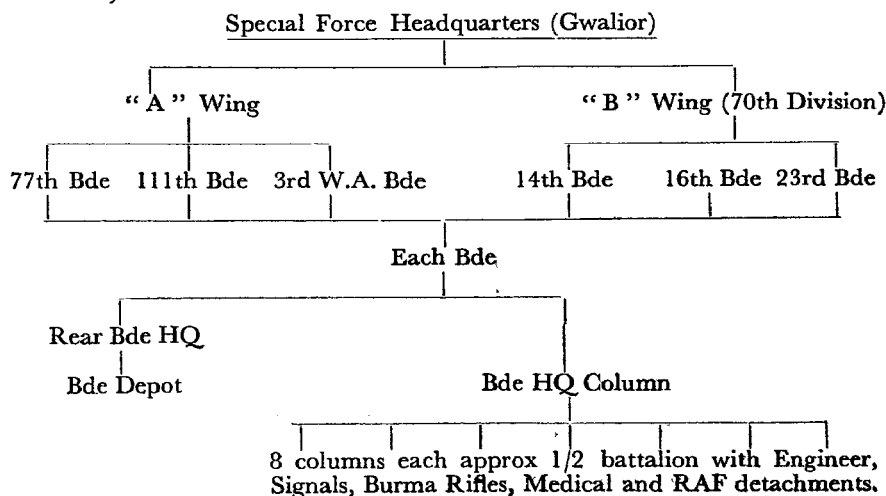
Operations 3rd Indian Division (Special Force)

FORMATION OF THE SPECIAL FORCE

While the first Wingate expedition was still in Burma and there was some considerable doubt as to whether it would be able to extricate itself from the east bank of the Irrawady, the C-in-C, Field Marshal Wavell decided to raise a second Long Range Penetration Brigade to be ready for operations in October 1943. The 111th Infantry Brigade was accordingly formed in April 1943 and located for training purposes in the jungles of U.P. between Jhansi and Jubbulpore. Following the original pattern it consisted of two battalions which were later raised to three.

Brigadier Wingate returned to India from the Quebec Conference in October with authority to raise a force of six brigades each of four battalions. The force was created out of the 111th Infantry Brigade; the reconstituted 77th Infantry Brigade to which four new units were posted in place of the two that had taken part in the first expedition; the 70th British Division, whose three brigades were brought up to a strength of four battalions each by the conversion of the divisional reconnaissance regiment and artillery into infantry; and finally by the transfer of the 3rd West African Brigade of three battalions only from the 81st West African Division. Brigadier Wingate was promoted to the rank of Major-General on the creation of the force. The medical cover for the force was derived from Nos. 173, 189, 215 British Field Ambulances and 35 British Field Hygiene Section all from the 70th British Division and Nos. 3 West African Field Ambulance and 27 West African Casualty Clearing Station from the 81st West African Division. In addition, there were small detachments of medical officers and RAMC/IAMC orderlies attached to the 77th and 111th Infantry Brigades.

The force concentrated for training in the area Gwalior-Jhansi-Nowgong-Jubbulpore-Saugor, and was first organised in two wings, with a view to retaining as far as possible the identity of the 70th British Division, as under:—



Since virtually all the units and services of the force, with the exception of brigade staff and infantry, were non-existent except for those belonging to the 70th British Division the above organisation was soon broken up and the force was integrated into six brigades all directly under the Special Force Headquarters. Colonel W. K. Campbell, DSO, MBE, MC, RAMC, was appointed ADMS for this force but the title of this appointment was later changed to that of DDMS.

On the recommendation of the DDMS, the GHQ(I) was requested to provide the following establishment:—

For Headquarters

DADMS	One
DADH	One
DADM	One
Medical Officer	One (to deal with Headquarters staff)
Clerks RAMC	Five (1 QMS, 1 Sergeant, 1 Corporal, 1 Lance Corporal, 1 Private)

For A & B Wings

ADMS	Two (One for each Wing)
Staff Captain (Medical)	Two (One for each Wing)

The Headquarters staff was appointed, but no appointments were made for "A" and "B" Wings. The Officers Commanding Nos 173 and 215 Field Ambulances acted as ADsMS of "A" and "B" Wings respectively for a short time. By the end of January 1944, the above two officers had been posted away from the Special Force. When the force moved forward into the operational area in January 1944, it left Main Headquarters; the six Brigade Depots and a Training and Experimental Wing in the Gwalior area, and an ADMS was appointed for the operational wing which for reasons of security was now termed the 3rd Indian Division.

Brigade Medical Organisation

For each brigade, except the West African which was allowed to retain its own West African Field Ambulance, a new type of unit, called the Brigade Medical Unit, was devised. The organisation of the Brigade Medical Unit was as follows:—

(a) *Personnel and Equipment*¹

- (i) The Brigade Medical Unit was commanded by a Major. The Officer Commanding of the unit had one medical officer who was available for duty with any column of the brigade. RAMC personnel consisted of one warrant officer, one sergeant dispenser, one corporal nursing orderly, one corporal clerk and sixteen British other ranks. Of these the staff dealing with medical stores initially consisted of the warrant officer, sergeant dispenser and one British other rank.

¹ For War Establishment see Appendix XV.

- (ii) Equipment used by the Brigade Medical Unit during the campaign was that of Headquarters Company of a Field Ambulance with slight modifications in ordnance stores and tentage.

(b) *Role*

The role of the brigade medical unit was as follows:—

- (i) To be capable of establishing a thirty bedded hospital in the brigade area during training and non-operational periods or at the brigade rear headquarters or other protected firm base during operations.
- (ii) To supply reinforcements to the columns as required. This only worked satisfactorily upto the time the brigades went into action. Thereafter owing to unequal casualties in the various brigades and the difficulty of introducing reinforcements, resources were pooled and sent out to columns whenever possible, but this was most infrequent.
- (iii) To supply medical stores to columns of its own brigade in training area² and in operational area for an approximate period of 3 months.

A scale of equipment for use by the column medical officers was drawn up.² This was packed in two panniers specially designed for operations of this nature.

Each column had, on its establishment, one medical officer and four other ranks. The medical officer in charge Brigade Headquarters Column was appointed Senior Medical Officer with the rank of Major.

The three British Field Ambulances of the 70th British Division were disbanded. RAMC staff for the columns was provided from the personnel released from these field ambulances. The surplus personnel were returned to the RAMC Depot, Deolali. IAMC personnel were detailed by Headquarters, Lucknow District.

The DDMS had suggested that each column should have one medical officer and eleven other ranks, RAMC for British or IAMC for Indian columns. This was not approved as it was considered that it would increase the size of the columns and make them unwieldy. General Wingate considered that one medical officer and two other ranks would be sufficient as all ranks in the column should be capable of looking after themselves, and would only require medical assistance in the more severe type of cases. He further suggested that use could be made of the Column Padre as a medical orderly. It was finally decided that each column would have one medical officer, one sergeant and two other ranks RAMC and three other ranks RAMCC (in British columns) and IAMC (in Indian columns) without Padres.

This establishment was subsequently found quite inadequate. The medical officer was severely handicapped when a medical orderly was required for an isolated group, e.g. the Recce Platoon or Commando Platoon or when a group was isolated for any length of time from the main

² See Appendix XIII.

column. The responsibility for looking after all the casualties rested with the medical officer in charge of the column. To make the columns self-sufficient an attempt was made to train the officers in 'first aid'. The time available was very limited and only a sketchy course in first aid could be covered.

Training

During the training period each brigade operated independently. The medical personnel were attached to the columns, and apart from their work with them no collective medical training was done in the force. Brigade medical units lived in the brigade area but took no part in the general training. They proved, however, too small to deal with all the sick in the brigade, and became merely a collecting post to which the column medical officers sent the sick. These were then evacuated to the hospitals in the Jhansi area.

Transport

Although on the establishment of the force six ambulance cars were authorised these could not be obtained and 3 ton lorries fitted with Berridge equipment were issued in lieu, and these were later replaced by 15-cwt trucks fitted to carry four patients. As brigades were widely separated from each other while in training and as there was no central point at which the casualties could be collected and evacuated to hospital, the medical units had to function independently. This meant that in many cases units had to evacuate casualties over a distance of 100 miles to the static hospital in the Jhansi area. With the limited transport available this was most difficult.

When the brigade moved out for an exercise away from its permanent area the medical unit had to send a detachment with it. From the limited number of officers and men available, it was only possible in most cases to send one truck and a few nursing orderlies only.

Medical Stores

The officer commanding the brigade medical unit indented in bulk from the Medical Stores, Jhansi, and issued stores to the columns out on training as and when required. For the collection and distribution of the stores ambulance trucks were used as no other vehicles were available.

Evacuation and Hospitalisation

The patients were evacuated to the following hospitals for treatment during the training period:—

<i>Jhansi</i>	British Medical Hospital
	Indian Medical Hospital
	21 British General Hospital (600 beds later replaced by
	80 British General Hospital—200 beds)
	Det. 40 West African General Hospital
	41 ICD (BT)
	46 ICD (IT)

<i>Chattarpur</i>	9 British CCS opened end of January 1944
<i>Talbahat</i>	27 WA CCS 100 beds (75 WA, 25 British).

Special Force medical service was entirely responsible for the evacuation of patients to Jhansi hospitals. The vehicles of the brigade medical units were thus fully employed day and night evacuating over long distances.

For a time an ambulance train, which was stationed around Jhansi, carried casualties from Mahoba three times a week. This was later replaced by two coaches which were attached to an ordinary passenger train. This too proved difficult in that there was only one train and it passed through Mahoba at midnight. Patients, therefore, had to be loaded at night. A small staff from one of the medical units had to remain at this point permanently and travel each night with the coaches to Jhansi. When No 9 British Casualty Clearing Station opened at Chattarpur the position eased to some extent and an urgent case could be dealt with in a shorter time than before. Evacuation from the 77th and 111th Infantry Brigades presented no difficulty as they were only at a short distance from Jhansi. The West African Brigade had its own Casualty Clearing Station and had no difficulty as the Field Ambulance still retained its normal establishment of eleven ambulance cars (Austins). From the Casualty Clearing Station cases were evacuated to a detachment of No 40 West African General Hospital in Jhansi.

Not long before the operations were due to begin the health of the force was seriously affected, and threatened to endanger the success of the whole campaign. During the jungle training the incidence of malaria had steadily increased. Their operational exercises had been made so arduous and realistic, particularly as regards rations, that the men were exhausted and over fatigued. Suppressive measures soon controlled malaria. A period of rest and recreation on a boosted scale of rations reinforced with vitamins soon rehabilitated the force in time for the role it was destined to play.

As a result of the first Wingate Expedition the Medical Directorate at GHQ(I) was of the considered opinion that the medical cover was utterly inadequate. This technical opinion was, however, overruled by General Wingate's tactical conceptions. Stress was laid on the over-riding essential that all personnel of the force must be medically upto A. 1 plus standards. Many of the officers and men of all units, including medical, had to be replaced before training was completed for medical, physical or psychological reasons. There was at one time a tendency to post personnel to the force who were physically upto the highest standard but psychologically unsuitable owing to lack of balance, responsibility or discipline. In the ultimate issue it was found that officers and men with the highest standards of devotion to duty, character and leadership were the best, even though disease and strain reduced their physical condition far below that which was considered acceptable. This was particularly noticeable among technical personnel such as, Signals, Medical and Chaplains.

The Outline Operational Plan

General Wingate visualised the force being employed in two echelons of three brigades each. The first echelon was to move into Burma in the early part of 1944. These brigades were to converge on Indaw which was considered to be the strategic key to Upper Burma. After two months these three brigades were to be withdrawn from operations and the second echelon would take over and hold the Indaw area until relieved, in its turn, after another two months by other troops airlanded on the two Indaw airstrips. By October a general ground link up was anticipated with the American-Chinese forces advancing south from Ledo, the Chinese Tenth Army advancing west from Yunnan and the IV Corps advancing east from the Indo-Burma border.

Force Concentration

After a large scale training exercise held at the end of December 1943, the 16th, 77th and 111th Infantry Brigades were selected to form the first echelon and moved to their concentration areas in early January 1944—16th Infantry Brigade to Ledo area, 77th Infantry Brigade to Lalaghat in the Brahmaputra valley and 111th Infantry Brigade to the Imphal area—each leaving its brigade depot staff at Orchha in the Jhansi training area. The brigade medical units accompanied their brigades, but were to move to the Force Air Base at Agartala prior to the introduction of their parent brigades into the operations. On the arrival of the Tactical Headquarters of the force it was found that the air base of only one brigade could be located at Agartala so that all the three were set up at Sylhet. Agartala being used later only for one brigade in the second echelon. Once the brigades moved into Burma the main functions of the brigade medical units were to supply their respective brigades by air dropping of medical stores and equipment and to take charge of the brigade air base personnel. Rear Brigade Headquarters were initially located at Imphal with the Force Tactical Headquarter, but when the Japanese offensive threatened to cut off Imphal, which occurred very soon after the introduction of the first echelon of the force into operations, Force Tactical Headquarter moved to Sylhet and Rear Brigade Headquarters accompanied it, except that of the 23rd Brigade which joined its air base and brigade medical unit at Agartala. There was no medical staff at the brigade depots in the Jhansi area. A medical officer was appointed by Central Command India to the combined depots of the 16th, 77th and 111th Infantry Brigades located at Orchha. The 14th Brigade, the 23rd Brigade and West African Depots were situated in the Lalitpur area and a medical officer from No 27 West African Casualty Clearing Station was detailed as medical officer in charge of this area. At a later date the 14th, 16th and 23rd Brigade Depots moved to Bangalore and the medical officer from Orchha Camp was detailed to accompany them. The 77th and 111th Infantry Brigade Depots moved to Dehra Dun and the medical officer in charge of the Burma Rifles was detailed to take the medical charge of the two brigade depots.

The DDMS proposed that the division of the Force Headquarters

medical staff as between the operational area and the Main Headquarters at Gwalior should be as follows:—

At Main Headquarters, Gwalior	DADMS
	DADH
At Tactical Headquarters, Imphal (later Sylhet)	ADMS
At No 1 Air Base, Sylhet, with freedom to move elsewhere as necessary	{ DDMS
	{ DADH

This was not agreed to by the Force Headquarters, and it was laid down by General Wingate that only the ADMS would proceed to the operational area where he would be located at the Tactical Headquarters as medical adviser and the whole of the remaining personnel of the medical staff would remain at the Main Headquarters at Gwalior. This made it impossible for the DDMS to direct and control the medical cover of the force engaged in active operations or to advise the commander on matters of medical importance. The situation deteriorated even more when the DDMS was forbidden even to visit the operational area or to contact his ADMS on the latter's appointment to the Tactical Headquarters which did not occur until after the hurried move of the Tactical Headquarters from Imphal to Sylhet.

Lt. Col. J. Mewton, IMS, the newly appointed ADMS, after visiting the DDMS, Fourteenth Army, reported to Sylhet where General Wingate had moved with a small planning echelon of the Tactical Headquarters to supervise the introduction of the glider-borne advanced parties of the 77th and 111th Brigades. After making a rapid inspection of the widely separated brigades which were to go into operation with the first echelon, he made his report to General Wingate in Imphal. He was instructed to make whatever arrangements he considered necessary for the reception of casualties evacuated by air either to the air bases at Sylhet or Agartala and move forward air fields or temporary landing strips from which light planes would operate to collect the casualties from the columns in the field in consultation with the DDMS, Fourteenth Army. This was the first attempt at devising a medical treatment and evacuation plan in the rear of the point at which the casualties were loaded into an aircraft by its column medical staff. A few days later the ADMS learnt for the first time that the fly-in into Burma was due to begin on the following evening. No arrangements, whatsoever, had been made for the hospitalisation of casualties occurring either during the landings or during the course of the operations. Ad hoc arrangements had, therefore, to be improvised at once, which were made more difficult as the DDMS, Fourteenth Army, was already fully pre-occupied in preparing for the expected Japanese offensive against the IV Corps and had no previous knowledge of this new commitment.

However, a small hospital at Sylhet which was being used for casualties from Pioneer units engaged in building aerodromes was improvised for casualties from the force. Fortunately the matron and nursing sisters of 91 Indian General Hospital at Imphal were evacuated to Sylhet and this nursing personnel was posted to this hospital. For

the initial stages of the operation this improvised hospital, deficient not only of technical personnel but also of all equipment and even accommodation, performed the duties of a Casualty Clearing Station evacuating the casualties by ambulance train. Gradually the harassed medical staff of the Fourteenth Army, already fully extended by the Japanese offensive, was able to build up an Indian General Hospital on this nucleus.

On 10 April 1944, Colonel W. J. Officer, RAMC, took over the appointment of DDMS Special force from Colonel Campbell. The policy had been for the force to be entirely self-contained and independent of all outside help. Over secrecy on the part of the commander had prevented even his medical staff from giving him advice, or planning in any detail behind the collecting zone of the medical evacuation chain. It had equally prevented the Fourteenth Army Headquarters from having any inkling of any extra commitment which would be suddenly thrust upon them when engaged in a major battle, and which might cause a complete re-deployment of their already strained medical resources.

The Evolution of the Operational Plan

General Wingate's experience in the 1943 expedition had led to the conviction that the air was the only reliable method of forward supply and the only possible means of evacuating casualties and prisoners. At the Quebec Conference, General Arnold, Chief of Staff of the United States of America Air Force, had promised to provide him with a composite air component which was raised by Colonel Cockran of the U.S.A. Air Force and styled No 1 Air Commando USAAF. He hoped that light planes, which were to be included in this unit, would operate from advanced landing grounds behind the IV Corps front on the Indo-Burma border and ferry back casualties from the columns behind the Japanese front line.

Early in December 1943 when Col. Cockran arrived in Gwalior, in advance of his unit, the first plan was enunciated. It was anticipated that sufficient troop carrying aircraft would be available to ferry the 77th Brigade across Burma to a Chinese airfield in Yunnan. From here the brigade would march westwards towards the target area while the other two brigades of the first echelon (16th and 111th) would cross the Chindwin and proceed eastwards, the former from as far north as feasible and the latter from the area of the IV Corps. To each brigade would be allotted its own squadron of light planes for casualty evacuation which would be based on strips to the west of the Chindwin behind the IV Corps front.

On the arrival of General Wingate and Col. Cockran in the operational area the latter realised that the light planes did not have sufficient radius for the outward and return flights from west of the Chindwin to the Indaw area. Again, reconnaissance indicated that the Japanese were holding the east bank of the Chindwin in strength from Tamonthi to Kalewa, thus making the introduction of the 111th Brigade on the ground virtually impossible without enormous casualties at the outset. Finally, the Chinese did not agree to the use of an air-strip in Yunnan by

the 77th Brigade. Successful trials carried out in the Gwalior area with the first WACO gliders of No 1 Air Commando, after the first echelon had moved forward to the concentration area, combined with the difficulties enumerated above led General Wingate to formulate his "stronghold" theory, late in January 1944. Each brigade was to construct a Dakota landing strip within fifty miles of Indaw in as inaccessible an area as possible. The stronghold would be held by one battalion with anti-aircraft and field artillery and would form an operational base for the brigade's light plane squadron. These would fly out to temporary strips, collect casualties and bring them back to the stronghold from whence they would be evacuated by night in Dakota aircraft to the air base at Sylhet. A suitable stronghold site existed for one brigade in the Kyaukkwe valley, north-east of Indaw, and a second was considered possible south of Indaw at the confluence of the Irrawaddy and Meza rivers. Accordingly, it was decided in early February that the 16th Brigade would march in from the Ledo area, and, if possible, build a stronghold in the upper Meza valley on arrival there. The 77th Brigade would fly in glider assault parties to two natural clearings in the virgin jungle of the Kyaukkwe valley. These strips were given the code names "Piccadilly" and "Broadway". It was also arranged that after the construction of strips fit for Dakotas to land, the main body of the brigade would fly in; one of the two strips would be then abandoned and the other would be developed into a stronghold. The 111th Brigade in like manner was to fly into another strip at the Irrawaddy-Meza confluence. This last was eventually changed to another natural clearing in the jungle east of the Irrawaddy, in the centre of the Shweli river bend, which was given the code name "Chowringhee", when air reconnaissance indicated that the original site was too marshy. It was never intended that 'Chowringhee' should be converted into a stronghold since it was easily accessible to Japanese wheeled vehicles. To provide garrisons for the strongholds General Wingate obtained a Gurkha battalion and a field and a light anti-aircraft battery from the Fourteenth Army and broke up the 3rd West African Brigade to produce additional independent infantry battalions.

The Execution of the Plan

The 16th Brigade left the American-Chinese road near Shingbuiyan on 16th February and struck south to cross the Chindwin and move on the upper Meza valley via Honkin.

On the evening of 5 March, the two glider assault parties from the 77th Brigade were preparing to take off for 'Piccadilly' and 'Broadway' from Lalaghat airfield when air reconnaissance reported that the former was obstructed by enormous teak logs. An immediate decision was made by the General Officer Commanding-in-Chief Fourteenth Army that both parties should proceed to 'Broadway'.

On 7 March, the assault glider party of the 111th Brigade took off for "Chowringhee". The nights following the assault glider landings at 'Broadway' and 'Chowringhee' saw the beginning of the emplaning of the main bodies of the 77th and 111th Brigades at Lalaghat, Haila-

kandi and Imphal and the build up of stores and garrison for the 'Broadway' stronghold. 'Chowringhee' was abandoned three days after the first glider landing. At a later date the 16th Brigade constructed a second stronghold in the upper Meza valley which was given the name 'Aberdeen'. 'Broadway' and 'Aberdeen', therefore, became the bases from which light planes collected casualties in the columns.

Emplaning arrangements for the medical detachments with columns were unsatisfactory. The force was widely scattered over the training area centred on Gwalior and in the mounting area from Sylhet in the south to Ledo in the north, while the brigades were to operate dispersed widely, 250 miles behind the Japanese lines, proceeding thereto from three separate air-fields and one road-head. Each area in turn required attention. Medical representation was necessary at every point, but could not be provided particularly having regard to the order that only the ADMS could come forward to the operational area.

One of the functions of the brigade medical units located at the Brigade Air Base was to receive casualties on their arrival in Dakota aircraft from the strips behind the Japanese lines. Although the majority of casualties were in fact delivered at Sylhet air strip, returning transport aircraft landed at all hours of the night with no prior notice that they carried casualties, while frequently transport aircraft carrying casualties were routed, for various reasons including adverse weather conditions over Sylhet airfield, to other airfields as far apart as Dinjan and Imphal. All such eventualities could not be catered for, but medical detachments were sited not only at Sylhet but also at Hailakandi, Lalaghat and Agartala. The original plan that each brigade medical unit would be responsible for the casualties and medical supply of its own brigade became impracticable. On the withdrawal of the 16th Brigade from operations in early May, No 16th Brigade Medical Unit was made responsible for the supply of medical stores and equipment to all the brigades in the field.

Since there were only two strongholds, namely 'Broadway' and 'Aberdeen' and since the wastage of light planes was high with hardly any replacement, it was considered that allocation of light plane squadrons to particular brigades was not practicable. These squadrons were, therefore, pooled and used on a divisional basis.

In view of the uncertainty at the commencement of operations as to how the evacuation of casualties would be effected, column medical officers were instructed that everything was to be done with the means at their disposal and to carry the casualties on the march, either on stretchers carried by bearers or on ponies with which the columns were supplied, so as to enable the return of the individual to duty as quickly as possible. Such nursing as was possible was to be undertaken at halts and in bivouacs whenever possible. It was visualised that in the event of an action with consequent increase in the number of casualties, or if, for any other reason the carriage of patients became impossible, arrangements would have to be made to leave them in the care of friendly villagers. If this was not possible then they were to be hidden in some secure place near water, with sufficient food, ammunition and money to enable them to subsist as

long as possible until help arrived, or until they became sufficiently restored to health to make their own way to safety. It was hoped that the abandoning of such casualties would never be necessary and medical officers were instructed to make every effort possible to get their casualties away by every possible means.

MEDICAL ASPECT OF THE SPECIAL FORCE OPERATION

Evacuation of Casualties

Fighting behind the Japanese lines necessarily produced problems not met with in other types of warfare. On occasions the problem seemed insoluble. The speedy evacuation by air was the only solution. The RAF and USAAF pilots worked ceaselessly and unremittingly often in appalling weather, and always at the risk of being shot down.

Wherever possible, columns constructed light plane strips in the vicinity in which they were operating and casualties were evacuated by light planes to the nearest Dakota strip. These light planes were of two types, L1 and L5. The former could carry four casualties (two lying and two sitting or one lying and three sitting). The L5 on the other hand could only evacuate one sitting patient. Moreover the length of the strip required by the L5 was greater than that required by the L1. Dakota strips were for the most part situated in the strongholds and were used by incoming supply planes of Troop Carrier Command bringing in supplies and equipment into the strongholds. These were available for the evacuation of casualties on the return trip.

This method proved successful right up to the onset of the monsoon. No fighter opposition was ever encountered and evacuation was continued without interruption.

From the columns to the light plane strips the casualties were usually carried with the help of the local inhabitants or by personnel of the columns acting as stretcher bearers. They were invariably escorted by an armed guard.

It was obvious that when the monsoon developed Dakota aircraft would not be able to land on the improvised strips in strongholds, and, therefore, casualty evacuation would become impracticable. This was one of the many reasons that led to the force moving its area of operations further north so that light plane strips constructed by them could be within range of surfaced Dakota strips at Myitkyina, Wazarup and Tinkawk Sakan which were in the rear of the positions held by General Stilwell's Chinese force. Even this change in the axis of evacuation did not surmount all the difficulties. The area consisted of valleys running north and south with heights up to 6,000 ft. on the flanks and culminating in the Patkai Range rising to 9,000 ft. in the north. Generally, suitable sites for light plane strips existed only in the open valley bottoms which were dominated by the Japanese and were frequently found to be marshy and flooded. Again, the monsoon clouds piled up in these valleys against the Patkai Range in the north, and for days at a time only blind flying was possible for light planes which were not equipped with the necessary instruments.

Apart from the above problems, evacuation to the north necessitated the use of the American lines of communication and their army medical organisation. No 20 American General Hospital at Ledo and another hospital at Shingbwiang were the two chief American base hospitals. Forward of these were American field hospitals with medical detachments stationed on the air strips at Myitkyina, Wazarup and Tinkawk Sakan for loading the casualties. These field hospitals were served by American field medical units, including ambulance cars, which evacuated to them casualties from the forward areas.

American and Chinese casualties collected at Myitkyina, Wazarup and Tinkawk Sakan were evacuated back to the base hospitals at Ledo and Shingbwiang by the Dakotas of the air evacuation unit stationed at Chabua. This unit also evacuated casualties of the force from the three forward air fields at Myitkyina, Wazarup and Tinkawk Sakan to Ledo where they were staged by a detachment of a brigade medical unit. In the evening the ambulance planes returning to their base airfield at Chabua would collect the force casualties and drop them at Dinjan airfield. Here another detachment of a brigade medical unit loaded the casualties into ambulance cars which conveyed them to the Combined Military Hospital at Panitola. Serious cases requiring immediate hospitalisation were, however, retained at Ledo and admitted to No 44 Indian General Hospital established there to serve the Indian labour units working on the Ledo-Myitkyina road.

The Combined Military Hospital at Panitola thus became in effect a Casualty Clearing Station which distributed its patients to the British and Indian hospitals at Digboi and Dibrugarh. The DDMS Fourteenth Army expanded the three hospitals at Panitola, Digboi and Dibrugarh by allotting to each a Malaria Forward Treatment Unit.

By 1 June, the 14th and 111th Brigades and the reconstituted 3rd West African Brigade had moved north from the area of White City and Blackpool Blocks, sited near Henu and Hopin respectively, and were operating against the Japanese lines of communication through the railway corridor from a firm base on the shores of the Indawgyi lake. The 77th Brigade, on the other side of the railway corridor, was developing the attack on Mogaung, and Morris Force had closed in on Myitkyina operating on the east bank of the river Irrawaddy against the Japanese located in the riverine villages opposite that town. All the brigades had accumulated a considerable number of casualties. At one time 1,200 were awaiting evacuation.

The light planes had dwindled to a mere half dozen and the monsoon at its height made strips unserviceable, and flying on account of low clouds was impossible for days on end. Over a month previously such conditions had been anticipated and low level air reconnaissance of Indawgyi lake, at that time dominated by the Japanese, had indicated that it could be used by flying boats. Arrangements had, therefore, been made for the provision of Sunderland flying boats, should these be required. Early in June a Sunderland flying boat from Ceylon arrived on the Brahmaputra at Dibrugarh to be joined later by a second. These two machines between them evacuated over 500 serious casualties from

the lake, but the conditions were far from suitable for their use. They were designed for low level flying over water and to operate from sheltered anchorages.

At Dibrugarh there were no maintenance facilities, and their anchorage in the Brahmaputra was exposed to a 15 knot current bearing large uprooted trees and other debris. They were required to climb 10,000 ft., virtually their maximum ceiling, to surmount the Patkai Range and then descend to and alight on the lake at an altitude of 1,200 ft. above sea level. All this was done through dense monsoon clouds which necessitated pin point accuracy in navigation. Day flying only was possible and being slow and unarmed they would have been an easy prey to the Japanese fighters, particularly when loading up casualties on the lake.

As envisaged, this method of evacuation came to a sudden end due to the sinking of one of the boats at her moorings by a floating tree and serious damage to the wing floats of the other, as well as to the impossibility of even improving adequate maintenance.

Casualties still piled up and other methods of evacuation had to be devised. The advancing American-Chinese forces had by now reached Kamaing. Accordingly on their outward trips the Sundarlands carried assault boats and outboard engines. With these and country boats requisitioned from the lakeside villages, the Royal Engineers of the force assembled a fleet for casualty evacuation downstream by river from the lake to Kamaing, thence up the Kamaing river to Wazarup. Owing to the acute shortage of air transport, the medical branch was asked to arrange the minimum medical support necessary for this chain of evacuation.

On the staff estimate that the journey by river from the lake to Wazarup would take twelve hours, it was suggested that two complete brigade medical units would be required, one to undertake reception and despatch at Wazarup and the other to establish two staging posts on the route sited at approximately four hour intervals. An advance party of an officer and eight other ranks with 400 lbs of equipment was flown in to Wazarup from the Main Headquarters at Sylhet. The remainder proceeded by rail to Dinjan for onward despatch by air from that area.

With the acute shortage of air and rail transport there was a long delay in the implementation of this plan. To fill this hiatus skeleton staging posts were established at the lake and along the route by the medical officers available with the columns and a much reduced brigade medical unit was flown in by the American Air Evacuation Unit to Wazarup. While this gave the barest possible aid to the sick and wounded it sufficed until the other units and equipment arrived for which arrangements had been made.

Arrangements were also made for those sick and wounded who were still awaiting evacuation from Indawgyi lake, to be moved up the Indaw Chaung to Kamaing, staging at Chaungwa and Manwe en-route, where medical officers with medical staff had been located. At Kamaing all serious cases were admitted into the American Field

Hospital until they were fit enough to stand the second stage of the journey to Wazarup. The trip down the Indaw Chaung to Kamaing was seldom free from incidents. The sluggish stream was frequently choked with large masses of floating water hyacinth and other obstacles to navigation. Japanese stragglers were always to be guarded against, and were no less dangerous than Chinese detachments who shot at sight as Kamaing was approached.

Evacuation from Kamaing was carried out by means of a shuttle service on the British manned American assault craft to Wazarup. This part of the journey, being against the current, took about 12 hours, and was an extremely trying experience for the casualties on board. The construction of head cover which was attempted in the early days was given up as it made the boats top-heavy and dangerous in the fast flowing current. Hence the casualties were exposed to the hot burning sun or to the drenching from heavy monsoon rains. No medical attention was available during the course of this long journey as medical personnel was not available to man each boat with a medical attendant. In spite of the dangers and hazards of this long and arduous route the number of casualties evacuated ran into many hundreds and, with the exception of one fatal accident, all were evacuated safely.

At Wazarup a brigade medical unit was eventually established for their reception. From there the patients were conveyed by planes of Troop Carrier Command of the Air Evacuation Unit to Dinjan. Prior to the brigade medical unit getting into position the casualties were admitted to and treated in the American hospital. Owing to the severe monsoon conditions there were occasions during which the Wazarup strip, became unserviceable, and the casualties had then to be transported by road to Shadazup where they were admitted to the American Evacuation Hospital situated there. Movement by road from Wazarup to Shadazup necessitated three transshipments by ferries across the meandering Kamaing river. Casualties were unloaded from American ambulances or trucks, loaded into an open ferry boat in competition with innumerable Chinese soldiers, unloaded on the far bank there to wait for another vehicle to arrive, unload and turn round for the journey northwards. From this hospital they were conveyed by light planes to the all weather Dakota strip at Tinkawk Sakan as and when the intervening road was not closed by flooding, and thence by Dakota to Dinjan. At times the casualties were also evacuated by light planes from Wazarup to Shadazup.

By the end of June, the three brigades to the west of the railway corridor had established a firm base at Kakren on the hills overlooking the Japanese lines of communication. Here a light plane strip was constructed and as long as this remained serviceable casualties were evacuated by light plane to Tinkawk Sakan. When, in its turn, this went out of action, evacuation was carried out through Manwe by river to Kamaing and Wazarup. To the already trying river journey was added a tedious march along muddy mountain paths from the areas in which columns were operating to Lakren and thence to the lake. A few captured elephants, however, were available for more serious cases,

The 77th Brigade soon reached the high ground south of Mogaung investing this township. The brigade had no opportunity since its withdrawal from the White City of evacuating any of the sick and wounded. About two hundred and fifty casualties were awaiting evacuation in that region. The area around Mogaung was almost completely under water. The railway linking it with Myitkyina was in Japanese hands. It was thus completely isolated from all contact with the outer world. A recce was made with a view to investigate if a L1, converted by the addition of floats could be landed on the water of a nearby river but this plan was eventually found to be unworkable. The float plane was, however, used for evacuating from the lake to Tinkawk Sakan. Being amphibious it proved an excellent means of getting away some of the most serious cases from that area.

The situation at Mogaung by mid-June had become most critical. Over 300 seriously wounded casualties had accumulated. A light plane strip was improvised by putting branches of trees and coconut mats on a base of sand bags. This proved successful and evacuation by light planes to Myitkyina commenced. From Myitkyina they were carried by returning supply planes to Dinjan.

With the move of the 111th, 14th and West African Brigades towards the line of Japanese withdrawal from Mogaung, evacuation to Lakhren became more difficult. It was decided, therefore, to use the Taungi-Pahok road and the Kamaing-Pahok road. A detachment of No 80 Parachute Field Ambulance of the 51st (Parachute) Brigade operating in the Imphal plain was dropped at the Pahok cross roads where it established a staging post. Evacuation was now through Pahok by road to Makaing, thence by river to Wazarup. As soon as the remaining pockets of Japanese resistance in this area were mopped up, a light plane strip was constructed at the Pahok crossroads and serious cases were evacuated by this means direct to Myitkyina. When the Myitkyina-Mogaung Railway was freed of all the Japanese it became the main route of evacuation.

The problem was now to decide how best to make use of the railway. The rolling stock was plentiful but motive power was almost non-existent. Jeeps were converted by a change of wheels for use on rails. Each jeep was capable of drawing one 20-ton flat. Three such trains were made and used to good effect. Later six Buda petrol motor driven trucks were flown in. They were more powerful and satisfactory in pulling the railway flats.

Gradually the greater part of the sick were evacuated. The scene of operations by mid-August, had shifted southwards to Taungi. A medical unit was, therefore, necessary forward of Pahok. The medical unit from Wazarup was brought forward to milestone 15 on the Pahok-Taungi road and arrangements were made for a light plane strip to be prepared on the road itself. At this stage the remaining brigades of the force were relieved by the 36th Division and operations, as far as Special Force was concerned, came to an end.

In no theatre of war were the methods used probably so numerous or diverse nor was improvisation stretched to such lengths, as in this

operation. It will be seen that air evacuation to India not only became possible but so successful, in the early stages, that in many cases men were back in the base hospitals within twelve to twenty-four hours of their being wounded. The jettisoning of casualties did occur in a few isolated instances e.g. in the retreat from 'Blackpool' when after an unsuccessful action the heavy Japanese fire made the collection and removal of the most seriously wounded impossible. At other times when the wounded were being carried and had, for reasons of speed or insufficiency of bearers, to be abandoned they were all so seriously wounded that their chances of survival were very slender.

The policy of economy in man power, the treatment of the individual within the column and his rapid return to duty, remained the basic principle throughout the campaign even when the successful method of evacuation was devised. It was always understood that only the most serious cases requiring skilled nursing would be evacuated out of Burma. Cases of malaria, diarrhoea, septic sores, were all treated by column medical officers even when malaria was sufficiently severe to necessitate the administration of quinine intravenously. Every means available to get the man back on his feet was adopted, and gradually it became the accepted practice to treat nearly all the cases of malaria with an initial dose of quinine intravenously.

Towards the end of the campaign when men and medical officers were feeling the strain, both mentally and physically, there was a tendency amongst some medical officers to send out men for whom, during the earlier period, evacuation from Burma would never have been considered. As the means of evacuation became more uncertain and irregular, the attention of medical officers had to be drawn to the basic policy, and the importance of a strict selection of the cases for evacuation.

The basic policy of retaining and treating casualties within the columns was accepted and carried out. It was, however, done under great difficulties, for the number of medical personnel was quite insufficient to deal with even the small number of casualties occurring during the pre-monsoon period. The medical personnel had to carry out not only the numerous duties involved in the efficient nursing of the sick but also the fatigues necessary for their accommodation, protection, cooking, and sanitary well-being. It was obviously not possible to allot combatant personnel for these duties when they were already fully employed in their own tasks of local defence and patrolling together with attending to their own personal needs.

It was felt that in the 'Strongholds' some form of field hospital would have been ideal. The original idea of the brigade medical unit was that it should be so employed. But owing to lack of aircraft space and the other duties undertaken by it, that was not done yet. Whenever possible medical personnel of the columns were combined to have a semblance of a field hospital, but their resources were inadequate and their usefulness was restricted.

All commanders were high in their praise for the medical personnel with their columns. They worked under the most extra-ordinary difficulties of climate, terrain, and insufficiency of equipment. They

carried out their work with cheerfulness and an enthusiasm which was beyond all praise. With lack of communications, the loss of and at times the absolute absence of medical supply drops, the appalling weather conditions, and the lack of cover, nursing of some of the more acute fevers was almost an impossible task. And it was rendered more so owing to the shortage of medical personnel.

The Return

All Brigades on their withdrawal from Burma, with the exception of the 16th and 23rd Brigades, concentrated in the reception camp at Tinsukia. Here they were placed on a special convalescent scale of rations, received their first hot bath for months, and were given a complete new issue of clothing and necessities. At this camp the psychiatrist attached to the force was located, and as the various brigades passed through, he was in a position to take a cross section of each brigade and assess their general condition and morale. He could see any special cases considered by the medical officers to require psychiatrist advice and treatment. The reports on his observations confirmed that the morale was highest in those units and formations which finished with a recent success in battle and lowest in those which had experienced disappointment and reverses. Considering the length of time the men had been in, and the hardships to which they had been subjected, morale, on the whole, was surprisingly good.

Inter-communication

Inter-communication between column medical officers and senior medical officers, on the one hand, and the DDMS on the other did not exist. Medical messages were invariably incorporated within the body of the normal column signal messages for Rear Brigade Headquarters. These were seldom extracted and passed for the information of the medical branch. An attempt was made to send in a weekly medical situation report giving the necessary details. But the results were disappointing. Some medical officers did not realise the importance of doing this although the help which they themselves expected and which could be available was dependent on its prompt submission. Many, however, did make a real attempt to comply and the senior medical officer of the 14th Brigade sent daily situation reports—at one stage by signal—none of them, however, reached either the DDMS or his staff. In other cases reports even were irregular and out of date when they were received.

Hygiene and Sanitation

During the training period the standard of sanitation and hygiene discipline in the force was poor. The necessity for the rapid training of personnel in Long Range Penetration tactics absorbed the attention of the commanders. The trained sanitary personnel of a unit, if fit, were removed from their ordinary duties to increase the fighting strength of the columns. The cleanliness of camps became the responsibility of fatigue parties, which were constantly being changed. At one time during the training phase 70 per cent of the personnel of one brigade were

for Indian and British troops were 4.21 and 8.72. The main diseases affecting the troops were malaria, dysentery and diarrhoea, and venereal diseases. Some formations of the 7th Indian Division were also affected by malnutrition and exhaustive investigations were conducted to find out the causes of deficiencies.

Malaria

The incidence of malaria in the early phases of the operations was rather high and in the early first three weeks of May particularly so. The rate of incidence in April was 0.59 per thousand and by 20 May the rate had increased to 1.21 per thousand. The majority of cases were TB infection but a few patients discharged and cured were readmitted later with M.T. infection. The increase of incidence in May was anticipated as breeding and transmission are both more active in May. The troops had reached comparatively safer areas by the end of May but in reaching these they had to fight through very highly malarious areas. The incidence of malaria during the month of May in the formations of XXXIII Corps is given below:

Formation/Unit	Strength	No. of diagnosed Malaria cases	Rate per 1,000
2 Div	14,200	223	16
7 Ind Div	10,300	406	39
23 Bde	3,800	13	3
21 Ind Div	798	4	5
268 Bde	1,920	21	6
Other Corps Troops	8,700	79	9
Totals	39,718	746	

In view of the exigencies of the operations during this phase main reliance had to be placed on personal prophylaxis in the matter of prevention. Fortunately at this period olive green cotton battle dress was issued to the troops and thereby this aspect of personal protection was ensured once and for all. In the matter of enforcement of other measures of personal protection, like the use of anti-mosquito cream, no difficulty was experienced. Mosquito nets were used wherever possible, but face veils were not very popular as they further reduced visibility which in the jungle was usually poor enough. Gloves and face veils were however used by troops in the rear areas. Every unit had a month's supply of mepacrine tablets and rigid care was enforced on its administration. Except in slight discoloration of the skin no other untoward symptoms were noticed.

Three anti-malaria units were allotted to the Corps of which one was attached to the 2nd British Division. The latter was engaged in anti-malaria work including anti-larval and anti-mosquito measures in

the forward areas. The remaining two units were allotted to the L of C and rear areas. Four IMFTUs were available, two under the Command of the Corps and two under the Command of HQ L of C area.

Diarrhoea and Dysentery

The incidence of these diseases was well within limits, the rate during April being 0.36 per thousand. In the case of this group of diseases also there was a substantial increase in the incidence during May, the rate increasing to 0.66 per thousand. But this increase was short lived. All hygienic measures of control were enforced and at no time did these diseases give any cause for anxiety.

Venereal Diseases

The rate of venereal diseases was not particularly high and varied between 0.3 to 0.8 per thousand during the period under review. All measures including personal prophylaxis were enforced and the incidence was always under control.

Other diseases to which reference may be made are Infective Hepatitis, Diphtheria and enteric. There were only very few cases of these diseases and these call for no special comment.

Malnutrition

Frequent reports began to come in by the middle of May that a serious degree of malnutrition existed amongst the troops of the 33rd Indian Infantry Brigade and particularly in the 25th Mountain Regiment (Indian Artillery). Immediate steps were taken to investigate the circumstances of the incidence as a result of which it was established that high incidence of malnutrition existed and over 500 cases were detected who were either treated or undergoing treatment. These were admitted to 66 IGH and investigated thoroughly and treated. The condition when fully developed was suggestive of Sprue. The main features of the syndrome were (a) flatulent dyspepsia with anorexia, (b) diarrhoea with frequent loose pale frothy motions alternating with constipation, (c) glossitis with red smooth areas on the edges of the tongue, (d) angular stomatitis, (e) skin lesions characteristic of Vitamin 'B' deficiency, (f) loss of weight, lassitude and inability to carry out hard work, (g) anaemia with high color index. The incidence was not entirely limited to the 33rd Indian Infantry Brigade as mild versions of the same syndrome were found in patients from other formations as well.

It was suggested that the majority of patients were men enlisted from the scarcity areas of U.P. between 1940 and 1941. But this appeared to provide no rational explanation as the Jats and Ahirs by no means represented the whole personnel affected: for example fifteen Punjabi Mussalmans were admitted from the 25th Mountain Regiment alone. It was observed that of all the troops in the 7th Indian Division this brigade had the longest period of contact with the Japanese. Sleepless nights in cramped, uncomfortable and unhealthy surroundings over prolonged periods must inevitably have had their deleterious effects. Enquiries also elicited the information, possibly somewhat difficult to believe, that

Treatment in Base Hospital

The usually accepted principles of traumatic surgery were followed in the treatment in base hospitals.

1. Shaving and thorough cleansing of the surrounding skin.
2. Adequate wound excision, extraction of foreign bodies, manipulation and immobilisation of fractures.
3. Impregnation of the wound with sulphonamide powder and insertion of vaseline gauze drains.
4. Immobilisation in plaster of paris.

Anaesthesia

Intravenous sodium pentothal preceding open ether, if necessary, was almost routine, and from the point of view of both surgeon and patient was eminently satisfactory.

Resuscitation

The majority of patients on arrival in hospital exhibited signs of dehydration and in many cases this delayed operation. While there was no lack of plasma the absence of an adequate supply of whole blood was markedly felt. Some form of blood bank service would have been of great assistance. With local units and personnel constantly changing whole blood was not readily available.

STATISTICS OF THE OPERATIONS

General Considerations

It must be emphasised that the following statistics are based on admissions to base hospitals and not on the actual number of sick and wounded which occurred in the operational area. Cases, which under normal circumstances would have been evacuated to a field ambulance or casualty clearing station were treated and retained in the columns. This applies especially to such diseases as malaria, dysentery, and minor maladies, e.g. I.A.T., tonsillitis, etc., which normally constitute a high proportion of the admissions to field medical units. Owing to the Japanese interference with the channels of evacuation, several patients died before admission to a hospital or had sufficiently recovered to rejoin their units, when evacuation became possible.

Consequently, in any comparison with the sickness rate of other active formations due consideration must be given to the above factors and allowance made for a much higher incidence of sickness and battle casualties than the following statistics represent. It is conservatively estimated that the actual number of men who suffered from malaria was at least 60-70 per cent greater than the admission rate to the hospital would indicate.

The interruption on the long lines of evacuation through Japanese action, and the impossibility of removing casualties by air on account of inclement weather, must be taken into account when correlating these

statistics with the various actions, localities and general incidents of the campaign, for on occasions a delay of two to three weeks occurred between the onset of the disease or the infliction of wounds and the subsequent admission of these patients to the hospital.

Incidence of Casualties from all Causes

The total number of casualties from disease and enemy action admitted to hospital during operations was 7,217. This represents an admission rate of 40 per cent of the personnel engaged. Of the total casualties, sickness accounted for 5,422 or 75.1 per cent of the hospital admissions; battle casualties amounted to 1,795 or 24.9 per cent of cases requiring hospitalisation. Sickness was, therefore, responsible for 30 per cent of the whole force requiring to be evacuated, and war injuries for 9.9 per cent.

Incidence of Casualties by Ranks and Nationalities

General: The composition of the force in the matter of personnel was very cosmopolitan, and at various times contained the following nationalities;—

British West Africans, Gurkhas, Indians, Burmese, Kachins, Chinese, Chins and Karens.

The last three nationalities, however, were represented by so small a minority that their number was insignificant, and their casualties have been included among those of the Gurkhas for the purpose of the statistics.

TABLE I

Incidence of Casualties from all Causes among Officers and Other Ranks

	Stren- gth	Total Admissions		Total Sickness		Total Battle Casualties	
		Actual	Ratio 1,000	Actual	Ratio 1,000	Actual	Ratio 1,000
Offrs ..	1,050	259	246.7	201	191.4	58	55.2
BORs ..	10,800	4,770	441.6	3,760	348.2	1,010	93.5
GORs ..	3,450	1,391	403.2	902	261.5	489	141.7
WAORs	2,700	797	295.1	559	207.0	238	88.1
Total ..	18,000	7,217	401.0	5,422	301.2	1,795	99.0

The total admission rate of battle casualties for the Gurkhas is markedly higher than that for other personnel. This is not surprising for all the Gurkha battalions took part in more than one of the major operations e.g. the garrisoning of 'Broadway', the protection and defence of 'Blackpool' and 'White City', and the successful capture of

Mogaung. With the exception of the British columns of the 77th Indian Infantry Brigade, few other battalions had participated in more than one major engagement.

The sickness rate was lowest among officers and West African other ranks. While in the case of officers this calls for little comment, the manner in which the West African personnel underwent the rigorous physical and mental strain of six months campaigning behind the Japanese lines is one of the outstanding features of the operation from the medical point of view. This fact became even more apparent on an examination of the troops after their evacuation from Burma. The fallow and emaciated condition of the BORs and GORs was nowhere apparent among the West Africans.

British

The incidence of every principal disease was highest amongst BORs. The greater prevalence of malaria and dysentery in comparison with the incidence of these diseases among officers can only be attributed to the much lower standard of anti-malaria and sanitary discipline amongst the former. This would appear to be substantiated by the more equal prevalence of infective hepatitis, typhus and I.A.T. diseases against which little preventative measures can be undertaken. The absolute necessity for the strictest observance of anti-malaria precautions is amply demonstrated by the fact that one out of every five BORs engaged in the campaign required to be evacuated for malaria.

Gurkhas

The incidence of malaria was appreciably lower among the GORs in comparison with the BORs. This could only be partly due to the relatively efficient anti-malaria discipline, as the standards observed by all ranks and nationality were far from satisfactory. An immunity from numerous attacks in their life-time together with an acquired ability to tolerate the incapacity arising from attacks of this disease and thereby avoiding the necessity for evacuation, offers a more acceptable explanation. The occurrence of dysentery among the Gurkhas in comparison with the BORs was even less frequent than the incidence of malaria. The previous remarks probably apply with greater force to dysentery as the immunity conferred would probably be of a more specific nature. It is of interest to note that no typhus fever was diagnosed among the GORs. From the available evidence, this may be accounted for by the fact that the brigades most affected with this disease did not include Gurkha Regiments and presumably did not pass through typhus infected areas.

The incidence of skin lesions among the Gurkhas showed the same prevalence as in other nationalities. However, there was a high proportion of tinea corpora which proved much less incapacitating than jungle sores and other widespread septic ulceration and lesions. In consequence, the number of personnel requiring evacuation was smaller than among other troops.

THE DISTRIBUTION OF PRINCIPAL DISEASES BY RANKS AND NATIONALITIES

TABLE II

Comparison by Ranks and Nationalities of the Principal Diseases, which required admission to hospital (Ratios per 1,000)

	Total Admissions		Officers		BORs		GORs		WAORs	
	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio	Actual	Ratio
Malaria and NYD Fevers	3,108	172.6	78	74.3	2,262	209.7	609	176.5	156	57.8
Dysentery and Diarrhoea	483	26.8	27	25.7	349	32.3	30	8.7	77	28.5
Inf Hepatitis	220	12.2	10	9.5	139	12.9	55	13.0	16	5.9
Typhus	116	6.4	10	9.5	89	8.2	.	..	17	6.3
I.A.T.	531	29.5	28	26.7	332	30.7	67	19.4	104	38.5
Other Causes	964	53.6	48	45.6	586	54.3	141	43.8	189	70.0
Total	5,422	301.2	201	191.4	2,760	348.2	902	261.5	559	207.0

West Africans

The relatively low sick rate among the WAORs was principally due to the much lower incidence of malaria as compared with other nationalities. This again cannot be attributed wholly to anti-malaria discipline. A non-specific immunity, in conjunction with an acquired ability to carry on while undergoing an attack of the disease and their magnificent physique appear to be largely responsible for the low sick rate. The dysentery and diarrhoea incidence was comparatively high. The general health of the West African troops remained good throughout the operations. When the monsoon commenced, injuries and inflammation of aerolar tissues became a problem of some magnitude, and at one time was responsible for more evacuations from this brigade than any other diseases.

Incidence of total Casualties by Brigades

The total number of casualties from disease and hostile action were distributed among the various brigades, as shown in Table III. As the strength of these formations and the period during which they were actually in the operation varied to a considerable extent, the figures in Table III are given in ratios per thousand per month for the purpose of comparison.

When comparing the incidence of sickness among the various brigades, an exact comparison from figures alone must not be drawn, for it must be remembered that each brigade was operating in different areas, with corresponding variations in epidemiology and climate. The distance covered by each formation varied considerably, some remained static for long periods, while others were required to keep on moving with little opportunity for rest or recovery from exhaustion.

The 14th Brigade, after its attack on Indaw, was confined mainly to the area of the Indawgyi lake, which has for years been known as "the graveyard of Steel brothers".

The 16th Brigade alone marched to its objective; a distance of approximately 250 miles over steep jungle clad mountains, and arrived in an exhausted condition, partly due to poor rations in the early days of their marching, but they were spared the difficulties of monsoon weather.

After being confined to the insanitary conditions of the Henu Block for a considerable time, the 77th Brigade travelled to Mogaung along the crests of sparsely inhabited and relatively healthy hills.

The 111th Brigade, in its turn, though not credited with the monumental march of the 16th Brigade, did in fact actually cover more ground and was in the operational area for a longer period than any other brigade, and had also to suffer a sojourn in the Indawgyi lake area.

The 3rd (West African) Brigade was in the hilly country, except for the last month, when they came down to the unhealthy plains.

It will be seen from the above that many contributory factors must be considered while reading and comparing these figures.

111th Brigade

Of the brigades which were required to undergo five months

TABLE III

Total Admissions to Hospital due to Sickness and Battle Casualties from the Brigades Comprising Special Force
(Ratios per 1,000 per month)

Brigade	Approx. Strength	Total Admission		Total Sickness		Total Battle Casualties		Ratio Sickness to Battle Casualties
		Actual	Ratio per 1,000	Actual	Ratio per 1,000	Actual	Ratio per 1,000	
14 Bde ..	3,600	1,433	79.61	1,271	70.61	162	9.00	7.8/1
16 Bde ..	3,600	1,038	96.11	888	82.22	150	13.90	5.9/1
77 Bde ..	5,100	1,759	65.69	940	35.11	819	30.59	1.2/1
111 Bde ..	2,900	2,033	127.46	1,650	103.45	383	24.01	4.3/1
3 WA Bde ..	2,800	954	56.79	673	40.06	281	16.73	2.4/1
Total ..	18,000	7,217	100.23	5,422	75.30	1,795	24.92	3.0/1

campaigning, the 111th Brigade had the highest admissions to hospital, principally due to its high rate of sickness. The casualty figures include those of Morris Force which was an independent detachment some 1,500 strong on the east bank of the river Irrawaddy. This detachment did not take part in the 'Blackpool' retreat. Casualties increased rapidly after the retreat from 'Blackpool' from both hostile action and disease particularly the latter, which in part may be ascribed to forced marches through quagmires along swampy paths, and also to a lowering of morale and discipline, with a subsequent increase in malaria, dysentery, and other preventable diseases. It is of interest to note that 68 per cent of the casualties from malaria, and 60 per cent of those from dysentery, in this brigade were evacuated after the fall of 'Blackpool'.

16th Brigade

The monthly evacuation rate from the 16th Brigade was the second highest in the force, principally due to the high incidence of sickness (82.2 per 1,000). As this brigade was engaged in the operational area for little more than three months, in comparison with the others which operated for a period of five to six months, and was evacuated before the onset of the monsoon, this high figure of sickness is all the more surprising. Some consideration, however, must be given to the fact that this was the only brigade to march to its objective over steep jungle clad mountains, and along tortuous tracks, the surface of which greatly impeded movement and made marching an extremely arduous task. Consequently when these troops eventually contacted the other brigades, which had been flown to their objective, they were, in the majority, suffering from extreme exhaustion with its concomitant—a lowered resistance to disease. As a result, the sickness to the battle casualty ratio was the second highest in the force.

14th Brigade

From the above table it will be seen that the ratio of sick to battle casualties was greatest in the 14th Brigade. This was in a large measure due to the role allotted to this brigade during the campaign; continued arduous marching along tracks, knee deep in mud, with only occasional skirmishes with the Japanese, a pitched battle occurring only rarely. This is shown statistically by this formation having the lowest evacuation rate of battle casualties. Moreover, this brigade suffered greatly from several minor epidemics of typhus in comparison with the other brigades where the incidence was negligible.

77th Brigade

Turning to the 77th Brigade, it will be found that ratio of battle to sick casualties was creditable, almost as many battle casualties being evacuated as those of sickness. This was mainly due to the fact that this brigade adhered more strictly to the policy laid down that only such personnel would be evacuated to base hospitals as were unlikely to be of any further use for some considerable time. This policy was stringently enforced by this brigade even to the extent that some cases had as many as

twelve attacks of malaria before they were evacuated, and a substantial number had five to seven attacks. In consequence the hospitalisation of sick from the 77th Brigade was the lowest recorded. On the other hand, the battle casualty rate was also the highest, owing to this formation having been engaged in more operations against the Japanese than the others.

3 West African Brigade

The 3rd West African Brigade had the lowest hospital admission rate owing to the low incidence of diseases. In addition, the incidence of battle casualties was also low as these troops were never engaged in any full scale operation apart from the defence of White City.

Distribution of Principal Diseases by Brigades

Table IV shows the monthly distribution of principal diseases among the various brigades.

TABLE IV

Average Monthly Incidence of Principal Diseases by Brigades requiring Hospital Admission (Ratios per 1,000)

	Total Sickness	Mal & NYD F	Dysen- tery	Inf Hep	Typhus	I.A.T.	Other Causes
14 Bde	70.61	40.94	5.61	1.78	4.33	8.28	9.67
16 Bde	82.22	52.31	11.30	..	.	1.39	17.22
17 Bde	35.11	20.47	2.39	1.01	0.15	3.92	7.17
111 Bde	103.45	64.01	6.14	9.09	1.00	10.84	12.04
3 W.A. Bde	40.06	14.11	5.57	0.95	1.05	5.30	13.10
Whole Force	75.30	43.20	6.7	3.1	1.6	7.4	13.4

14th Brigade

Although of minor significance in regard to the number of casualties which were evacuated the 14th Brigade had also the misfortune of having the highest incidence of typhus fever. The disease first made its appearance towards the beginning of May, with a few sporadic cases which gradually increased in number during the month, until approximately forty cases had been evacuated, while another twelve died or recovered before evacuation could be arranged. Cases continued to occur in small numbers intermittently until the middle of August when a fresh outbreak occurred mainly confined to one battalion. From the evidence available it would appear that of the 60 cases which occurred from this time to the withdrawal of the brigade from operations more than 30 per cent proved fatal. The serious nature of this disease with its prolonged fever, severe prostration and general debility together with its high death rate was quickly recognised by the troops and caused a considerable degree of anxiety and loss of morale. Fortunately, at no time did it assume epidemic

proportions, although the threat of its possibility was there throughout the campaign. Malaria accounted for 68 per cent of the cases of sickness evacuated from this brigade and I.A.T. gradually developed into a serious problem towards the end of operations, almost 250 cases being flown out during the last few weeks.

16th Brigade

Attention has already been directed towards the very high sickness rate in the 16th Brigade, although it participated in the campaign for only three months. Analysis of this sickness rate shows that over 75 per cent of the admissions from this formation were evacuated for malaria and intestinal disorders, two of the main preventable diseases. There were no cases of infective hepatitis or typhus, and I.A.T. was of little importance as a cause of evacuation, as this brigade was withdrawn before the commencement of the monsoon.

77th Brigade

In spite of the policy adopted by the 77th Brigade to evacuate the sick only as a last resort and there too when it was evident that the patient would be of no further use to the brigade, malaria was still responsible for over 50 per cent of the cases requiring hospitalisation. Most of these patients had innumerable attacks of the disease and were in an extremely debilitated state. Dysentery was the lowest recorded in any brigade, but this may be due to the policy regarding evacuation than to a higher standard of sanitation. Moreover, this brigade was continually on the move as compared to the other brigades, and generally passed through areas where ground pollution had not yet occurred by the passage of other troops. The incidence of I.A.T. was also lower than that in any other brigade which remained in Burma during the monsoon.

111th Brigade

The highest sickness rate was recorded in the 111th Brigade. Of its total casualties 61 per cent were due to malaria. In comparison with other brigades dysentery and I.A.T. had a higher incidence. The higher incidence of disease in this brigade can hardly be attributed to any special circumstances which did not affect the other brigades. After its withdrawal from 'Blackpool', and subsequent long marching through quagmires in drenching rain, the fighting spirit of the troops was at a low ebb, and sickness rate increased. In sharp contrast was the casualty rate recorded in the 77th Brigade, whose morale after the successful defence of the Henu block and the capture of Mogaung was at a very high pitch. A minor epidemic of 145 cases of infective hepatitis occurred in the 111th Brigade, the cases appearing sporadically in the beginning, and gradually increasing in frequency until approximately 90 cases were evacuated during the last month of operations.

3rd W.A. Brigade

The incidence of malaria was only 30 per cent of the total sick casualties in the West African Brigade, and this was the only brigade in

which a figure below 50 per cent occurred. Dysentery and I.A.T. were comparatively high but 33 per cent of the total sick cases came under the heading of non-preventable diseases.

Discussion of Principal Diseases during Campaign

Before entering upon a discussion of these principal diseases separately, the time at which they occurred during the campaign as shown in Table V deserves consideration.

When the columns entered Burma and the evacuation of sick and wounded to the base hospitals in India became feasible, the policy adopted was to retain personnel until disease had lowered their efficiency to such an extent that they would be of no further use to the unit. In this manner manpower was maintained at its maximum level, and owing to the very high standard of health and endurance required to remain with the columns during its long and arduous marches, patients were evacuated before their general constitution was seriously affected. However, in spite of the gruelling nature of their task, the excellent training and physique of the men allowed brigades to carry on with a high proportion of men who, in other formations, would have been immediately admitted to a field medical unit.

This policy proved admirable for the first ten weeks of the campaign. Then the strenuous nature of the operations under extremely adverse conditions in conjunction with a diet which was becoming increasingly monotonous, began to affect the physical condition of the troops. Disease became more rampant and the evacuation rate rose from five per 1,000 during the first fortnight of March to 43 per 1,000 in the first fortnight of May.

During the second fortnight of May the evacuation rate dropped again and was lowest except for the initial fortnight. This was due to the evacuation of 'Broadway' and 'Aberdeen' strongholds, the only available airstrips suitable for Dakotas, from which evacuation by air would be possible in any large numbers. Thereafter, casualties could only be removed from the columns by light planes, whose effectiveness was seriously curtailed by the monsoon, so that reliance could no longer be placed on their regularity. Consequently the monsoon adversely affected the health of the force, in two ways:—

- (a) Directly, by increasing the difficult conditions under which the troops were living and fighting—constant marching in heavy rain and sleeping on sodden ground with no opportunity for drying clothes and boots. Not only did these conditions further undermine the general health but caused an alarming incidence of infected skin lesions and
- (b) Indirectly, by preventing the evacuation of personnel who required hospitalisation and who by having to remain with their units underwent a still further deterioration in health.

When more effective methods of movement were ultimately established in the middle of June the operational commitments of the force had greatly increased and made it essential that every available man

TABLE V
Fortnightly incidence of Principal Disease throughout the Campaign
(Ratios per 1,000)

Week Ending	18 March	1 April	15 April	29 April	13 May	27 May	10 June	24 June	8 July	22 July	5 Aug.	19 Aug.
Mal & NYD Fev.	1·12	3·23	11·14	26·24	22·45	4·30	13·52	12·16	33·67	43·71	98·40	60·06
Diarr Dys.	0·16	1·61	1·60	2·06	6·00	0·23	2·08	1·04	3·12	6·24	16·48	14·18
Inf Hep.	0·16	..	..	0·30	1·33	0·30	1·12	1·12	1·29	4·88	11·84	4·65
Typhus ..	..	..	..	0·18	1·04	0·15	4·08	0·43	0·64	0·69	3·36	1·40
I.A.T. ..	..	..	..	..	1·48	0·38	2·96	1·64	7·80	8·96	27·68	21·10
Other Causes ..	3·59	4·20	5·38	6·30	10·81	1·90	4·00	2·85	6·60	7·02	25·76	20·50
Total ..	5·03	9·04	18·12	35·08	43·11	7·26	27·76	19·24	53·12	71·50	183·52	121·89

should remain in order to maintain sufficient fire-power and to carry out the tasks allotted to them, the most important of which was the capture of Mogaung. By the time these tasks had been accomplished almost another month had elapsed, and in spite of the very low standard of health to which the personnel had to be reduced before being sent out, the evacuation rate had increased to 115 per 1,000 per fortnight by the middle of July.

In consequence, troops arrived at the reception camp in India in a very emaciated condition, covered with sores and many on the point of collapse. In the opinion of the DDMS at least 30 per cent of these men were so undermined constitutionally that they would be unfit for front line operations for at least a year. He considered that three months was the maximum period during which personnel could undertake this type of operation, and even this period must be reduced if carried out under monsoon conditions. The figures in Table V support this view.

Malaria

Of the 5,422 patients evacuated from sickness, 3,108 (57·3 per cent) belonged to the group "NYD Fever and Malaria", that is to say more than half of the patients who were considered sufficiently ill to require hospitalisation, suffered from these diseases. This number represents 17·3 per cent of the total engaged.

At first sight it would appear that the incidence of malaria in this force compares very favourably with that occurring in other formations. When, however, the difference in policy regarding evacuation is taken into account then it can be appreciated that the true incidence of malaria in this force was very much higher than evident at first sight and was very likely higher than in other formations fighting under similar conditions.

As the period of operations lengthened, other less obvious deleterious effects of malaria became apparent, in addition to the more evident loss of manpower from evacuation. Firstly, the fighting efficiency and morale of the personnel, who had suffered from three or four attacks of malaria, diminished considerably. Secondly, a further diminution in health occurred insidiously and indirectly from these repeated attacks of malaria. The general resistance of the troops to infection was lowered, and other diseases such as dysentery, diarrhoea, respiratory infections and skin diseases had a much more crippling effect than might have been otherwise. In combination with chronic malaria these made evacuation sometimes an urgent necessity. Otherwise, if this constitutional weakness had not been present, these patients could have remained with their columns. Thirdly, an even more serious sequel to the above combination of malaria and other concomitant diseases was debility, anaemia, cachexia and other indications of a very grave nature undermining the efficiency and health of these men. This became more pronounced during the course of the secondary diseases. In many cases, similar constitutional defects were produced by repeated attacks of malaria alone, the number of attacks varying from four to twelve.

It was observed that patients were capable of marching and retaining their place in the column provided the initial temperature was treated at once with intravenous quinine. Routine administration of quinine by mouth, mepacrine and pamaquin could then be carried out along the line of march without any deleterious effect on the patient. The only adjuvant treatment required was the liberal intake of fluids and the carriage of the patient's equipment by mule during his feverish stages.

Column medical officers were of the opinion that the necessity for evacuating the patients must be made on individual consideration of the cases. Generally troops withstood at least two attacks, either fresh or relapse, but after the third, their efficiency and general health suffered due to debility and anaemia. Consequently, it was suggested that the optimum policy would be to evacuate all cases suffering from their third attack. Such a policy, on the one hand, avoided the serious depletion in the ranks such as occurred when the normal method of immediate evacuation to a field medical unit was adopted, and on the other hand, avoided the debilitation of a healthy constitution from frequent intermittent attacks which would occur if these men were retained beyond this period. Naturally this policy required certain modifications according to the tactical situation at the time e.g. lack of opportunity for evacuation, from clinical considerations such as the ability of certain individuals with a more robust physique to withstand at least three attacks, during which the constitution allowed some degree of recovery to combat the next infection. Moreover, these men if evacuated could fly in again as reinforcements after a short period of hospitalisation and convalescence.

Each man was eventually supplied with the following equipment for the prevention of malaria:—

Green battle-dress, a tin of mosquito cream, a head veil, a pair of cotton gauntlets and a container to hold 30 tablets of mepacrine. The statistics quoted above and reports of individual officers reveal that these articles were not put to effective use. Some men cut off the greater part of the trouser legs for it restricted the movement of legs while climbing and to avoid the continuous friction caused by wet trousers often caked in mud. The nets were often discarded as they affected vision. At the commencement of operation oil citronella in a greasy base was issued. The discomfort and the manner in which it failed to repel culicines, resulted in its falling into disrepute. Consequently little faith was placed in its non-greasy counterpart when its supply became possible. No organised parades were held to ensure its proper and regular use. Greater trust was placed in Dimethylphthalate and this liquid was generally used in a more conscientious fashion. Unfortunately, supplies of this chemical were limited and could not be available in the required quantities.

Suppressive treatment could not be carried out with a 100 per cent efficiency for various reasons. In spite of the fact that large quantities of mepacrine were issued to rear brigades for distribution to the columns, their arrival was a matter of extreme uncertainty and some columns were forced to suspend its issue to conserve supplies for curative treatment. No regular parades were held to ensure that the drug was

being taken when it was available. One medical officer reported that the mepacrine containers of two of his patients who had just died of cerebral malaria still contained their original quota of tablets, at a time when they should have been almost empty. Once again this reinforces the view that if the loss of manpower from malaria is to be reduced to a minimum and the chronic ill-health and disablement resulting from numerous attacks avoided, the strictest anti-malaria discipline must be enforced during the training period and any breach of this discipline severely punished. Methods of personal protection must be practised repeatedly until their observance becomes a conditioned reflex set in motion at the first indication of sundown. The application of mosquito cream and the administration of mepacrine must be ensured at an evening parade.

Owing to the inefficiency of the mosquito veil, a portable mosquito net was considered essential. The jungle hammock provided excellent protection but suffered from the disadvantage that it was heavy, bulky and airless. In the humid monsoon climate with air movement already restricted by the jungle, it was like an overheated hot house. It was felt that problem could be effectively solved by some modification of the hammock to reduce its weight and bulkiness. Such a modification can decrease the weight of the total equipment as the ground sheet and blanket could probably be dispensed with.

Clinical Considerations

Most BORs on admission to the hospital gave a history of intermittent attacks of fever during a period of two or three months. The number of attacks varied up to sixteen, the average being four or five. Although this information is based on the statements of the patients corroboration of the medical officer was received on numerous occasions confirming the fact that many had undergone at least twelve attacks.

As was to be expected, the general health was poor. In spite of the large quantities of mepacrine administered for suppression and quinine at the commencement of treatment, a large percentage still had positive blood slides on admission. Five per cent remained positive after a full course of treatment, although only one patient was recorded as remaining positive after two courses.

It is estimated that approximately 40 per cent of the cases admitted for malaria were evacuated ex-Assam as being unfit for active service within a minimum period of three months, owing to the debility and anaemia resulting from recurrent attacks, which in many cases were aggravated by the presence of some other concomitant disease. Many of these cases were re-categorised B or C, for long periods. Owing to the absence of any information regarding the deaths from malaria inside Burma, it is impossible to give an accurate estimate of mortality from this disease. It is considered unlikely, however, to have been more than three per cent.

Dysentery and Diarrhoea

The Dysentery and Diarrhoea group of diseases was responsible

for the evacuation of 483 patients, or nine per cent of the total casualties from sickness.

Causes

The main reason for the above incidence was poor water and sanitary discipline. The attention given to water sterilisation was inadequate and various factors contributed to this. Troops arriving at a water point with empty water bottles after a long and strenuous march were not prepared to wait half an hour for the water sterilising tablets to take effect, nor would the operational situation always allow of this. Moreover, the proper siting of water-points in regard to bathing was not always observed. A plentiful supply of good quality water sterilising tablets was not always available. The tablets supplied absorbed so much moisture in a few days that they coagulated into sticky paste. The water sterilising powder was issued in lieu, but it was not popular. As this was packed in 7 lb. tins its carriage became difficult. The constant opening of tins and contact with the air reduced the available free chlorine content of the powder.

It was not sufficiently realised that the site occupied by one column might, and actually was in some instances, soon to be occupied by another. The site was not infrequently littered with tins etc. Consequently the succeeding columns were forced to live in the acutest discomfort and under the most insanitary conditions possible through no fault of their own. They gave ample evidence of the route taken by columns. For this reason in the case of one brigade, orders were issued that toilet paper would not be used. The obvious solution of the problem was strict sanitary discipline with the burial of faeces.

In strongholds, trench latrines were frequently used but conformed to no known plan, for they were too shallow for deep trenches and too deep for shallow trenches. They were seldom covered with any sort of superstructure.

It was also stated that after consuming 'K' ration for a week or two, stools became loose, watery and light yellow in colour. Fortunately, only on very few occasions did it prove incapacitating and generally cleared up with adequate treatment.

Prevention

When elements of the force became static, as occurred at strongholds and road blocks, the necessity became even more pronounced for the strictest sanitary discipline in these confined areas. Bore hole latrines into which a charge of gelignite was dropped to increase their capacity was found eminently satisfactory but only when the lid was kept closed.

Clinical Considerations

Bacteriological investigations of the cases of dysentery admitted to the hospitals revealed the fact that the bacillary type was much more prevalent than amoebic. Both types responded satisfactorily to specific treatment and evacuation was not found necessary unless the

general health of the patient had been weakened by malaria or some other debilitating disease. Sulphaguanadine was not always available in the quantities required. Emetine produced no untoward effects, but injections were omitted if the patient was likely to be engaged in action within a few days.

Infective Hepatitis

Two hundred and twenty cases, or four per cent of the total evacuation from sickness, were admitted to the hospitals from this disease. The high incidence was mainly confined to the 111th Brigade from which 145 cases were admitted. The source of infection was easily traced, as two cases had to be evacuated from one battalion in this brigade two days after their arrival in Burma. Moreover, several officers were flown in during their convalescent period at their own request. One medical officer developed the disease two days before the operation commenced and refused to be evacuated when a replacement was eventually found. The outbreak commenced with a few isolated cases, the incidence gradually increasing until the average weekly number of evacuations was approximately 50 during the last month of the campaign.

Clinical Manifestations

The severity of the symptoms increased as the campaign progressed, and together with the very acute onset gave medical officers the impression that they were dealing with an outbreak of spirochaetal jaundice. One West African medical officer who had some experience of yellow fever was struck by the resemblance and requested that this possibility should be investigated in the hospital. The clinical manifestations soon allayed this fear. One case proved bacteriologically to be of the spirochaetal variety, the organism being found microscopically in the urine. Unfortunately, agglutination tests could not be undertaken for lack of facilities. In view of the many factors which together tended to tax the liver in an already debilitated individual, it is not surprising that the clinical manifestations of this disease were of such a severe nature.

I.A.T.

I.A.T. did not prove troublesome until the onset of the monsoon when it became a problem of increasing magnitude. Five hundred and thirty-one cases, or almost ten per cent of the total casualties from sickness, required to be evacuated from this cause, 350 of these being flown out in the last month of the campaign. These skin infections were not confined to any particular nationality and even the West African troops, who had managed to withstand to a greatest extent the rigorous conditions under which the force was required to operate, were compelled to send out a substantial number of men in the later stages.

Skin Diseases

The following were the commonest varieties of skin affections occurring during this operation:—

Jungle sores, septic prickly heat, widespread tinea of the feet and groins, which proved very disabling owing to the manner in which it res-

stricted marching, and bullous impetiginous lesions generally around the flexures. These bullae collapsed leaving raw skin, which rapidly ulcerated with further chafing. Boils and carbuncles were also common, and the surrounding cellulitis was often a marked feature of these lesions.

It is considered that one of the major causes of these skin infections was the constant marching through swamps in pouring rain, or in a warm clammy atmosphere, together with the absence or non-availability of clean, dry clothing and socks. Nevertheless, in most columns there was an absence of organised arrangements for bathing and washing of clothes to ensure that the more lax members of the column maintained the necessary basic standard of cleanliness. The number of cases of lice infestation was surprisingly small. The reason for this can only be attributed to a strict medical inspection prior to entering Burma and avoiding sleeping in villages. Villages were seldom entered and never slept in.

It may be recalled that body lice infestation was encountered in the 1943 expedition. The reason is that in 1943 small dispersal groups were forced to enter villages for food and frequently slept there whereas in 1944 food was always air dropped on columns which did not break up in dispersal groups.

Typhus

One hundred and sixteen cases or 2.1 per cent of the total evacuations from sickness were admitted to the hospital. Interrogation of medical officers after their return from Burma revealed that an additional 40 cases were diagnosed but were not flown out owing to the recovery or death of the patient before evacuation could be undertaken. The majority of the cases (77 per cent) belonged to the 14th Brigade, in which sporadic outbreaks occurred from the beginning of May to the second week in August. In other brigades, cases commenced to appear intermittently during the last two months of the campaign but mainly in July.

The type of terrain in which these cases were infected varied considerably. The area in which infection must have occurred in the first outbreak, estimating the incubation period to be 12 days, was mainly jungle interspersed with open paddy fields. The second minor epidemic broke out during the occupation of a village (Nammum) in which troops were static for almost a month. However, the greater part of it was covered with elephant grass and resembled more closely a jungle clearing than an inhabited locality. The third and most explosive outbreak could be traced to the infection occurring during the occupation of a chaung in which the banks of the river were covered with thick elephant grass. In general from the evidence available, the type of terrain in which the majority of cases became infected was open country abounding in elephant grass and in the neighbourhood of water. No cases occurred in dense bamboo jungle.

Typical tick eschars were present in only ten per cent of cases. No medical officer reported that he detected mites or their bites on any of the patients. From enquiries regarding the fauna in the areas where

infection occurred, the most probable reservoir was the field-mouse. Even in the village, few rats were to be seen.

It was not until the onset became more abrupt with a high temperature, which failed to respond to quinine, that typhus was fully suspected. Thereafter, the severe constitutional upset, the red bloated face with intensely congested conjunctivae, the prolonged fever without the intermittency of malaria pyrexia, and the appearance of a macula-popular rash on the trunk three or four days later, left no doubt regarding the diagnosis in the minds of the medical officers.

The progress of these cases caused generally grave anxiety. Pulmonary complications were generally severe, mental depression so profound that the patients appeared to have no desire to recover. This apathy was counteracted in the Black Watch Regiment to a very considerable extent when some one conceived the idea that the sound of the pipes might do much to dispel this apathy. Moreover, in the absence of specific treatment little could be done for these patients under the existing circumstances. Proper and efficient nursing was quite out of the question. Protection from the monsoon had to be improvised with indifferent success. Fever became unbearable in the warm, moist climate, and some patients lapsed into delirium. Water was warm and brackish and great difficulty was experienced in forcing these patients to maintain their water and salt balance and avoid dehydration. Diet was restricted to articles upon which the patients had existed for many months and which now produced intense nausea. The available nursing orderlies were not many and they could not cope adequately with the number of cases. Under these circumstances, and in men already debilitated with prolonged marching and recurrent attacks of malaria, it is not surprising that mortality from this disease reached the high figure of 29·7 per cent.

The Weil Felix reactions in all cases admitted to the hospital showed agglutination with OXK strains, although high titres were not reached until the eighth day after the onset of the disease. Agglutination with OX 19 and OX 2 strains was insignificant.

Malnutrition

Approximately one month after their withdrawal from Burma, 34 cases of deficiency in the vitamin B complex had been admitted to the hospital, seven cases from the 14th Brigade, the remaining 27 being distributed between the 77th and 111th Brigades. All cases occurred among British other ranks.

Of the seven patients admitted from the 14th Brigade, all suffered from multiple neuritis. A previous history of malaria was volunteered in six cases, and three had suffered from jungle sores. In the other brigades the symptomatology showed greater variety as will be evident from an analysis of the symptoms of 27 patients belonging to these brigades.

Lassitude and Muscular Weakness	..	..	..	24
Atrophic Glossitis	..	..	..	19

Heart burn	16
Fatulence	20
Vomiting	19
Anorexia	22
Diarrhoea	9
Pains in Legs	24
Muscle Cramps	14
Paraesthesia of Limbs	10
Impairment of Memory and Concentration	3

One of the most striking manifestations was the extreme degree of mental depression in these patients. Lassitude and, in some cases, even inability to move was marked. Depression was severe, and orientation and concentration were also affected.

No significant abnormality was found in the blood pressure and pulse rate, but in 21 cases the blood pressure was below 120 m Hg. The deep reflexes were altered in 18 cases, and there was some impairment of sensation in seven.

Five cases gave a history of malaria, and another six had suffered from dysentery.

These cases appeared more rapidly after evacuation from Burma. This was probably due to the fact that the 77th and 111th Brigades had lived almost entirely on 'K' rations until their arrival in the rehabilitation area, and the rations issued during their travelling period had little time to replace the body reserves of vitamin B complex, so thoroughly depleted in Burma. The aetiological factors included post-malarial complications, post-diphtheritic paralysis, or failure of intestinal absorption after dysentery or gastroenteritis. It was considered, however, that those were probably the precipitating factors in patients suffering from avitaminosis in a sub-clinical form. No fresh case of scurvy was found on examination, in the brigades after their evacuation.

The incidence of cases of avitaminosis was not the result of poor vitamin content of the 'K' ration, but to some extent was caused by the fact that the men threw away the biscuits in the "K" ration as these had a peculiar chemical taste and after a few days or weeks became extremely monotonous and unpalatable. This indicates the absolute necessity of including separate multi-vite tablets in the rations.

STORES, EQUIPMENT, RATIONS

Stores

Throughout the greater part of the operations the force placed all its demands for medical supplies and equipment on No. 16 Indian Depot Medical Stores. From June onwards the stores were supplied by No 18 Indian Depot Medical Stores.

Each brigade had a set of equipment which was expected to be sufficient for three months. In the beginning, each brigade medical unit was made responsible for the medical supply of its own brigade. Later, when the available medical officers were detailed for duties on various air strips for receiving casualties, No 16 Brigade Medical Unit

was given the task of supplying medical demands of the whole force.

Medical Officer in charge of each column carried two types of specially designed medical panniers.⁴

Messages for additional requirements were sent by each column in code to the air base. Such demands, in the beginning, were received once in five days from each column. The decoding by non-medical personnel, unfamiliar with medical nomenclature, was likely to lead to delays and errors. The medical demands, therefore, were sent direct to the brigade medical stores for decoding and supply. Information was also received of the time and date when the stores were required at the Air Supply Section. The medical stores staff handed over the required stores, to the Air Supply Section on the appointed date and time for packing and despatch. But medical supplies were often placed on a low priority. The medical stores, therefore, on occasions, had to remain lying for a long time at the Air Supply Section awaiting despatch. Their non-arrival in the column in time led to repeated demands for the same stores. These duplicate demands and issues were a drain on the diminishing stocks and involved additional work on the overworked staff.

The above arrangement was continued for some time. In order to save time and transport, it was, later, arranged that Quartermasters in charge of 'column supplies' should collect the medical stores along with ordnance and other stores for their respective columns. The system of demanding stores once in five days was not always observed. As many as eight demands were sometimes received in a single day.

Medical stores not in the code list and not available at the air base were supplied from the local hospitals, No 16 Indian Depot Medical Stores or by local purchase. Frequent demands for filled panniers and haversacks were also received. The medical stores demanded were despatched in ordinary panniers and improvised containers. Later two types of standard 'drops' viz. 'ten day drop' and 'before and after engagement drop' were made and frequently supplied in large numbers. At times this caused a serious wastage of certain items.

Certain difficulties were experienced in meeting the demands of drugs for diarrhoea and dysentery; the treatment of foot diseases and intestinal helminthiasis; and expendable items of war equipment required by medical units in strongholds. Difficulty was also experienced in the procurement of small wooden or metal containers for the packing of tablets and water sterilising tablets.

Medical comforts were appended to medical code list. They were intended for patients only. It was considered that the demands for them would, therefore, be small. From the large number of demands received it appears that they were being used to supplement rations.

Issue of mepacrine tablets to columns was a very difficult problem. In an air drop, particularly when carried out at night in thick jungle, many of the containers were not recovered, due either to being hidden by the undergrowth or being caught up on the tops of high trees.

⁴ For details see Appendix XIII.

Mepacrine tablets for 400 men for five days weighed only a few pounds and were packed in a container would not be found; consequently the column went without mepacrine with the inevitable result. There is a limit to what can be carried on the man, and in monsoon conditions it is doubtful if a month's supply of mepacrine tablets carried on the man would survive disintegration caused by constant movement and moisture. The only workable solution appeared to be to include the tablets in ration packs to ensure a constant supply to each man.

Stretchers

The normal ambulance stretchers were heavy and unwieldy and could not be freely dropped from the aircraft.

Ambulance Cars

Journey in an American Dodge 4×4 Ambulance Car was found quite comfortable. Even over a rough surface across country the amount of jolting experienced by a patient with a careful driver was found to be minimal.

Equipment

The average weight of the men in one column was 145 lbs., and the lightest equipped men carried no less than 67 lbs. of clothing equipment, arms and ammunition. This far exceeded the ratio of weight of equipment etc. to bodyweight of 1:3 which is recognised as the maximum for physical efficiency.

Water bottles issued were found unsatisfactory. Their corks rapidly deteriorated and became dirty. Their strings broke and the corks were consequently lost. The cloth covers easily got torn. The bottles with screw stopper secured by a chain were considered suitable.

During the monsoon, jungle hammocks were supplied to the columns chiefly for the benefit of the sick. They were eventually issued to as many personnel as possible. Although the weight was in the region of 7 lbs. everyone was prepared to carry them.

Casualty Saddles

The quality of casualty saddles was found to be unsatisfactory. The uprights and back straps easily broke when a patient's weight was put against them. It was probably due to inferior material being used in their manufacture.

Rations

During the various phases of the campaign many varieties of rations were used with varying degrees of success. The experiences with each are set out briefly below.

Rehabilitation Rations

Rehabilitation ration was used during the final training period in India in an attempt to maintain the men's strength at its peak level

and to prevent them using up their reserve. With certain modifications this ration was approximately one and a half times the normal scale of rations. While generally it achieved the object for which it was designed, but produced two adverse results. The first of these was a mild degree of avitaminosis, and secondly, it made the men dissatisfied with their normal ration when the time came for them to return to it. Some of the units which had this ration considered it was excessive in amount and that its issue was unnecessary. The avitaminosis was due to the fact that it was composed largely of tinned meat and biscuits.

Delhi Light Scale

This ration included amongst other articles, biscuits and cheese. Biscuits and cheese often reached the men in such an advanced stage of decomposition that they were quite inedible. The Delhi Light Scale ration was only issued during training and the American "K" ration was introduced from the moment units were sent into action.

American "K" type Ration

The "K" rations were satisfactory although monotonous. In the early days the biscuits were over sweet for the palate. These were immediately changed. Later instead of having a single type of biscuits, which was unpopular, for all meals, there were three types; a different one for each meal. The "K" ration contained coffee powder for breakfast, lime juice powder for midday meal and soup powder for the evening meal. There was no tea, milk or sugar which were essential for British and Gurkha soldiers. The force, therefore, devised a "K" ration supplement consisting of sugar and tea in individual muslin bags and individual packets of milk powder. The packing of this ration was satisfactory. It was waterproof enough to withstand immersion in water such as occurred in the crossing of deep rivers. The separation of the day's ration into three meal units was found necessary for those not infrequent occasions when rations were short and the men had to restrict themselves to 2/3rds or even 1/3rd of the ration. When a supply drop for "K" rations was made all spare lift in the aircraft was filled with what was termed "luxury" rations in the shape of rum, tinned beef and tinned fruit. Frequently only 7 lb. tins of beef were available with the result that these had to be consumed at once as they could not be carried on the man.

Road/Rail Rations

Road/rail rations were composed of various assortment of tins of bulky beef, sardines, milk, bags of sugar, tea, loaves of bread and cases of Delhi biscuits jumbled together in a gunny bag.

The tins of milk and of jam were all of such a size (11 lbs. or 21 lbs.) that when they could not be used at one time they had to be either thrown away or had the holes plugged with any bit of paper that could be found.

Special Force Rehabilitation Ration

Special Force rehabilitation ration proved very satisfactory. Two observations made by the DDMS of the force are of interest.

- "(a) A man who had been living on " K " type or equivalent rations for long period cannot tolerate and should not be given full normal rations immediately he gets out of Burma. He should have for the first two days at least sweet and easily digestible food, working gradually up to a normal diet. A large number of men, thinking they could take normal food, took it, and suffered from an acute diarrhoea in consequence.
- (b) Every opportunity for giving a change should be seized, and whenever a column gets into a stronghold a ration other than the one upon which he has been living should be sent in at once. Amongst the articles pickles, sauce etc. must be prominent".

CHAPTER XXI

The Last Japanese Offensive

The South East Asia Command had planned operations on a large scale in the Burma theatre for winter months of 1943-44. These operations had to be cancelled eventually because they were mostly of an amphibious nature and the landing craft and other impediments necessary for the operations had to be withdrawn for the cross channel invasion in the western theatre which was to be launched in the summer of 1944. The only operations of any magnitude that were conducted during the winter months of 1943-44 were operations in the northern sector by the Northern Combat Area Command (NCAC) or for opening the land route into China and the limited operations undertaken by the XV Corps in Arakan, to which a reference has been made already. The XV Corps operations in Arakan met with limited success, but the capture of Akyab, one of the primary objectives of this campaign, could not be achieved. The IV Corps in the central sector with its headquarters at Imphal was utilised in a pure holding role and contained the forces in the central sector, thus indirectly aiding the operations in the northern sector and Arakan. The inability of the Allied forces to launch a full scale offensive during these months was fortunately offset by the Japanese gamble on an all-out offensive in the central sector with the object of a major invasion of India. This move was fortunate in that the Allied forces were able to fight on a ground of their choice with the Japanese at the end of a precarious line of communication extending through mountainous country and over the river Chindwin. The outcome of this campaign which was long drawn out marked by bitter fighting and the siege of Imphal and Kohima marked a turning point in the war and led to the victorious advance of the Allied forces into Burma, ultimately ending in the liberation of Burma and the disastrous defeat of the Japanese. By employing their full force in an offensive on the central sector the Japanese forces indirectly helped in the success of the operations undertaken in Arakan and the northern sector. To IV Corps, therefore, fell the task of defending India's eastern frontier south and south-east of Manipur, and in this battle the Corps was engaged in one of the decisive actions of the war. The Corps sector in the centre extended from its boundary with the Northern Combat Area Command (NCAC), on the line Mawle-Tare-Wakching sector (forty miles east of Jorhat) down to the Chin Hills. During the winter months of 1943-44, IV Corps was conducting limited operations in this sector with a view to (i) clearing the Chin Hills as far as the foothills south of Tiddim, (ii) containing the Japanese in the Kawbaw valley and in the Atwin Yomas, and (iii) pushing forces across the Chindwin, if the Long Range Penetration brigade created a favourable impression.

Throughout the months of January and February 1944, the 17th Indian Division which was deployed on the Imphal-Tiddim road, was constantly in touch with the Japanese forces. Air reconnaissance and other reports indicated considerable activity east of the Chindwin river between Sittaung and Paungbyn. The actual offensive in the

central sector was expected to be launched across the Chindwin from the Thaungduk-Homalin area. This correct appreciation considerably helped in the preparations to meet the Japanese offensive. On 7 March, General Giffard, Commanding the Eleventh Army Group, warned the Fourteenth Army that a Japanese offensive was imminent and would probably be on a larger scale than anything the Japanese had so far attempted in Burma. He pointed out that the retention of Imphal in Allied hands was a political and strategical necessity and authorised limited withdrawals from the Chin Hills and the Kawbaw valley. Lieut.-General Slim, Commanding the Fourteenth Army, decided to concentrate IV Corps in the Imphal area and to fight a decisive battle there, thus imposing on the Japanese the disadvantages of long line of communication over one of the most difficult terrains imaginable. In the beginning of March the formations of the IV Corps were deployed as under:—

- 50th Parachute Brigade (less one battalion) at Ukhrul.
- 23rd Indian Division north and north-east of Imphal with one brigade at Ukhrul.
- 20th Indian Division on the Tamu road and in the Kawbaw valley.
- 17th Indian Division in the Tiddim area.

The 17th Indian Division was to withdraw to Imphal and act as a main counter-offensive force when the Japanese attack was under way. The Japanese forces engaged in this offensive consisted of the 15th, the 31st and the 33rd Divisions under the Japanese Fifteenth Army. 31st Division was in the north, 15th Division was in Tonezi area to the south of Imphal and 33rd Division to the east of Tiddim.

The Imphal plain, however, had not been previously planned as a place where active operations might occur. Large numbers of administrative establishments, hospitals, supply dumps etc. were located there at this time. All of them except those operationally essential, had to be withdrawn.

The Withdrawal of the 17th Indian Division

The opening phase of the Japanese offensive commenced on 6/7 March 1944 with the 33rd Japanese Division in the south advancing in two columns beyond Tiddim. One column moved to the north along the west bank of the Manipur river and the other moved northwards up the Kawbaw valley. In accordance with the general Army plan it had been decided that the 17th Indian Division was to remain in the Tiddim area, until the Japanese offensive actually commenced, but it was impossible to assess the extent of Japanese infiltration to the north so that a delay in withdrawal occurred. On 12 March the Japanese forces launched an attack on the main Imphal-Tiddim road at MS 110 and established a road block thus cutting off the 17th Indian Division from its base at Imphal. Realising the gravity of the situation the IV Corps issued immediate orders for the withdrawal of the 17th Indian Division to Imphal in accordance with the general Army plan. The Corps also ordered 23rd Indian Division which was then in Corps reserve at Imphal, to send two brigades to assist the 17th Indian Division in its

withdrawal. On 18 March, the 37th and 49th Indian Infantry Brigades of the 23rd Indian Division were both concentrated at MS 82 on the Tiddim road. 37th Indian Infantry Brigade was to prevent the Japanese from cutting the road between MS 82 and MS 100 and to establish contact with the withdrawing 17th Indian Division whilst 49th Indian Infantry Brigade was to protect the road between MS 83 and MS 70.

Meanwhile, troops of the Japanese column advancing to the east of the Manipur river had launched strong attack on Tonzang, held by troops of the 63rd Indian Infantry Brigade (17th Division). It was apparent that the Japanese were attacking this area in great strength and, since its retention was essential for the withdrawal, the 63rd Indian Infantry Brigade was moved to Tonzang on 13 March from Tiddim to strengthen the garrison and hold at all costs this important position dominating the only road to Tiddim and the Manipur river bridge. The 17th Indian Division received orders for the immediate withdrawal to Imphal on 13 March. Within 27 hours of these orders troops were withdrawn from their positions covering an area of fifteen miles radius round Tiddim scattered over a mountainous front, and the trek to the north began. By the morning of 15 March, Tiddim itself was evacuated. Meanwhile, the positions held by 63rd Indian Infantry Brigade in the Tonzang area were being attacked by the Japanese forces in great strength. The Japanese forces infiltrated to the north and established a road block at MS 132 in the region of Tuitum village. On 15 March, the 63rd Indian Infantry Brigade cleared this road block after very severe fighting. On 18 March, the main divisional group led by the 48th Indian Infantry Brigade crossed the Manipur river and moved to the north. Two days later the advanced elements of the 48th Indian Infantry Brigade accompanying the divisional group established contact with the Japanese forces covering the road block extending from MS 110 to 100. The main Japanese defences were along the ridge running east from MS 110. The covering positions were eliminated on 21 March and the battle for the main road block commenced thereafter. Fierce fighting ensued and the casualties were heavy on both sides but the brigade managed to clear the road block on 26 March by a series of outflanking and frontal attacks. The most dangerous road block on the Imphal-Tiddim road was now broken through. After the clearing of this road block the 63rd Indian Infantry Brigade moved up from the Tuitam area after destroying the Manipur river bridge, and on 27th March took over the defence of the hills in the MS 109 area from the 48th Indian Infantry Brigade. The latter brigade then commenced the advance to the north and quickly overcame Japanese opposition at MS 105 and MS 98. Meanwhile, the 37th Indian Infantry Brigade of the 23rd Indian Division was attacking in full strength from MS 96 to join up with the 17th Indian Division moving north, but the Japanese firmly held their ground. On 29 March, the leading elements established contact after heavy and confused fighting. Isolated Japanese positions in this region were mopped up and the road to Imphal was finally cleared on 31 March. Advanced elements of the division along with a sick convoy moved to Imphal direct on the same day, whilst the main divisional group arrived at Imphal on 5 April. The 37th and 49th Indian Infantry

Brigades of the 23rd Indian Division remained at MS 38 to block the road to Imphal.

The Siege of Imphal

While the withdrawal of the 17th Indian Division from the Tiddim area to Imphal was being conducted satisfactorily, Japanese offensives in the other sectors were developing at an alarming pace. On the night of 15/16 March, the 15th Japanese Division crossed the Chindwin in the Thaungdut sector and rapidly advanced to the Imphal plain. Further to the north the 31st Japanese Division crossed the Chindwin in the Homalin-Tamathin area and commenced the main thrust to Kohima area. In the rapid thrust to the Imphal plain the 15th Japanese Division came up along the forward positions occupied by the 20th Indian Division.

Mention has been made earlier of the 31st Japanese Division crossing the river Chindwin for the attack on Kohima. Troops on the left flank of this division along with forces from the 15th Japanese Division commenced to advance towards Imphal from the north-east. By 20 March these forces contacted the outer defences of Ukhrul about forty-two miles to the north-east of Imphal. The 50th Para Brigade had recently taken over the defence of Ukhrul and had barely completed its concentration when the Japanese attack started. The brigade was forced to withdraw to Sangshak, about twenty-eight miles north-east of Imphal where a strong defensive base was available. One of the bitterest battles of the whole campaign was fought in Sangshak area in the next four days. Determined attempts were made by the Japanese to reduce the position regardless of casualties, but each time the attack proved unsuccessful. The Sangshak position was abandoned on 26 March due to shortage of water and the difficulties inherent in supplying the troops confined to a small area by air. Another defensive position had already been established at Litan about eighteen miles to the north-east of Imphal. The Japanese forces which had bypassed both Ukhrul and Sangshak launched an attack on the Litan position on 26 March. During the following two days, the Japanese attack increased in intensity and after heavy and sustained fighting the troops were forced to withdraw to new defensive positions covering the approaches to the Imphal plain. This fighting withdrawal by the 50th Para Brigade to positions covering the approach to Imphal gained valuable time for the concentration of forces in the Imphal plain itself. The Japanese forces continued their advance westwards, the main column thrusting towards the Imphal plain, whilst patrols of varying strength by using the now familiar infiltration tactics managed to advance with considerable speed to the west, north and south of the main column, and managed to cut the Imphal-Dimapur road at MS 105 on 30 March. This road was not reopened till thirteen weeks later. On 3/4 April, an attack in strength was launched on the Kanglatongbi position about fifteen miles to the north of Imphal on the Imphal-Kohima road but did not meet with any success. Another attack on the following day failed to make any headway but the position was rapidly becoming untenable and was evacuated on 6 April. Imphal had now become entirely surrounded and the

whole garrison became dependent on the British and American air forces for maintenance, reinforcements and the evacuation of casualties. During this critical period, the Eastern Air Command consisting of the Strategic Air Force, the 3rd Tactical Air Force, Troop Carrier Command and the Photographic Reconnaissance Force, was responsible for the airlift of supplies and other necessities to Imphal, and but for their untiring efforts the garrison could not have withstood the Japanese onslaught.

As soon as it became clear that the Japanese forces had launched their major offensive on the central sector and their immediate objectives were recognised, it was decided to reinforce the troops in Imphal without delay. The 5th Indian Division which was in Arakan was ordered to proceed to Imphal immediately. The urgency of the situation caused by the rapid Japanese advance brooked no delay, and the 5th Indian Division was transported to Imphal plain wholly by air. Two brigades, namely, the 9th and the 123rd Indian Infantry Brigades, were flown to Imphal whilst the third brigade, namely, the 161st Indian Infantry Brigade was flown to Dimapur to be used in the operations in the Kohima area. HQ 5th Indian Division was established in Imphal on 24 March. The division was required to destroy the Japanese forces advancing on Imphal from the north or north-east, and any Japanese forces which succeeded in blocking the Kohima-Imphal road. 50th Para Brigade was placed under the command of this division.

Medical Cover for the Withdrawal of the 17th Indian Division

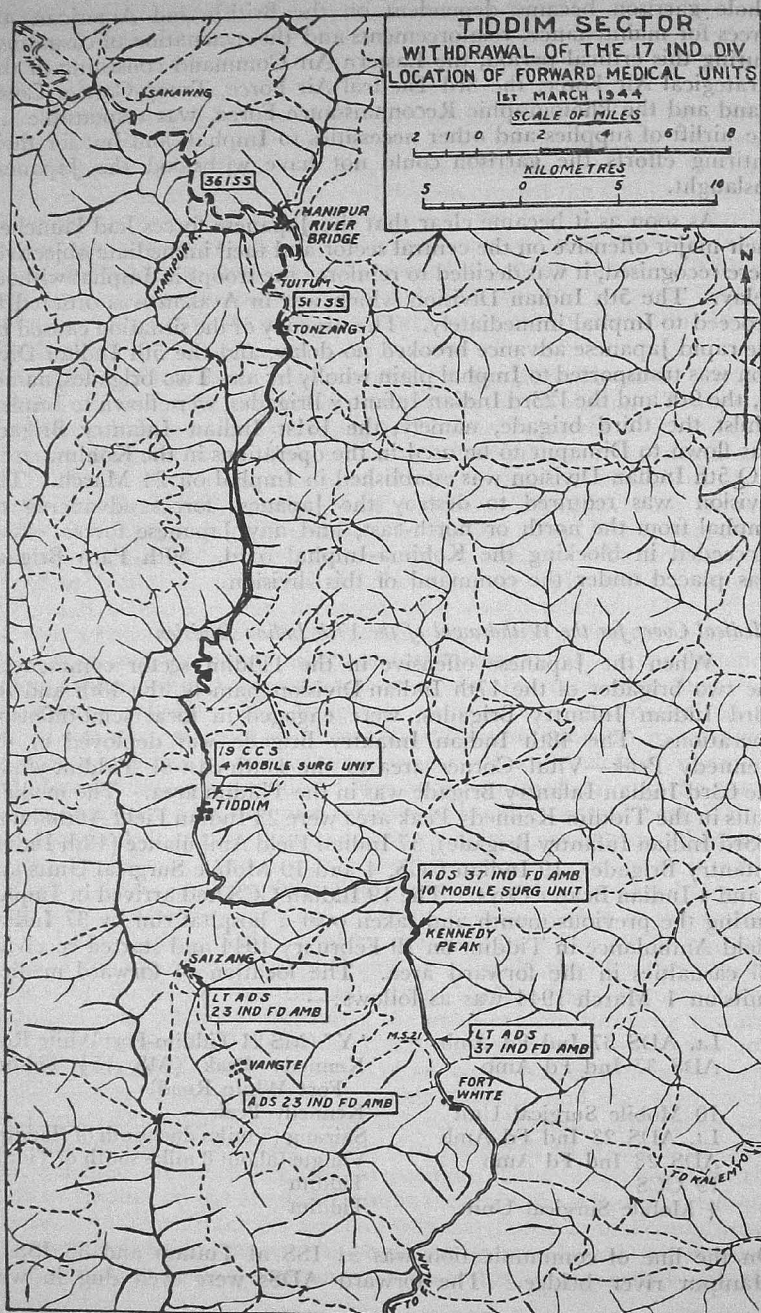
When the Japanese offensive in the Tiddim sector commenced, the two brigades of the 17th Indian Division, namely, the 48th and the 63rd Indian Infantry Brigades, were engaged in local semi-offensive operations. The 48th Indian Infantry Brigade was deployed in the Kennedy Peak—Vital Corner area to the south-east of Tiddim whilst the 63rd Indian Infantry Brigade was in the Tiddim area. The medical units in the Tiddim-Kennedy Peak area were 23 Indian Field Ambulance (63rd Indian Infantry Brigade), 37 Indian Field Ambulance (48th Indian Infantry Brigade), 19 Indian CCS, 4 and 10 Mobile Surgical Units and 3 and 4 Indian Bearer Coys. The 19 Indian CCS had arrived in Imphal during the previous month and taken over a hospital run by 37 Indian Field Ambulance in Tiddim on 19 February 1944 and started receiving all casualties in the forward area. The location of forward medical units on 1 March 1944 was as follows:—

Lt. ADS 37 Ind Fd Amb
ADS 37 Ind Fd Amb

10 Mobile Surgical Unit
Lt. ADS 23 Ind Fd Amb
ADS 23 Ind Fd Amb
19 CCS
4 Mobile Surgical Unit

'Y' (MS 21 Tiddim-Fort White Road)
Kennedy Peak (MS 15½ Tiddim-Fort White Road)
Kennedy Peak
Saizang (5 miles due south of Tiddim)
Vangte (about 8 miles south of Tiddim)
Tiddim
Tiddim

On the line of communication was 51 ISS at Tuitam and 36 ISS at Manipur river bridge. The forward ADSs were well dug in with



bunkers for patients. Casualties from the forward ADSs were evacuated by stretcher bearers to the rear ADS and thence by ambulance jeeps to the CCS at Tiddim. On 2 March, the ADSs at Kennedy Peak and 'Y' (MS 21) were subjected to intermittent shell fire from the Japanese positions in the Fort White sector. The ADS at Kennedy Peak came in for a great deal of attention and received three direct hits but fortunately no personnel or patients were injured. One of direct hits destroyed the sterilising room of 10 Mobile Surgical Unit. This intermittent shelling continued throughout the first week of March and on 9 March the Light ADS was withdrawn to Tiddim and the ADS at Kennedy Peak was withdrawn to Vital Corner leaving only bearer detachments with RAPs in the forward areas. The same day information was received of extensive Japanese infiltration to the north on either side of the Imphal-Tiddim road and the potential threat to the line of communication at Tonzang and Manipur bridge area (MS 126). One battalion of the 63rd Indian Infantry Brigade was moved to Tonzang immediately and took over command of forces in the threatened sector under the name of Tonforce. Medical arrangements for this force were to be provided by 36 ISS at Manipur river bridge. 23 Indian Field Ambulance detailed a detachment with one medical officer to be attached to this staging section. This medical officer was designated as the SMO of the Tonforce. On 10 March, the ADS 23 Indian Field Ambulance at Vangte was closed and withdrawn to Tiddim but the Light ADS was retained at Saizang.

On 10 March, orders were received from HQ IV Corps that all non-essential corps medical units would be withdrawn from Tiddim to Imphal without delay. 19 CCS was ordered to hand over the hospital to 37 Indian Field Ambulance forthwith and be ready to move to Imphal with 4 Mobile Surgical Unit, 19 Indian Dental Unit and 3 Mobile X-Ray Unit. All patients were also to accompany the CCS to Imphal but the hospital installations were to be left with the relieving unit. On 11 March, 19 CCS along with the other units mentioned left Tiddim for Imphal; 200 casualties also moved with this convoy.

The division was ordered to form defended boxes in the area occupied in view of the threat to the line of communication. It was planned that the personnel and equipment of the two field ambulances were to be divided so as to provide self-sufficient medical detachments for these boxes. All wounded and sick were to be treated as far as possible in these boxes and only high priority casualties were to be evacuated to MDS 37 Indian Field Ambulance in the divisional HQ box. 10 Mobile Surgical Unit at Kennedy Peak was withdrawn on 11 March and was attached to the MDS. Supplies of ration and water for a period of ten days were to be provided in each box.

The withdrawal of the 17th Indian Division commenced on 14 March. It was ordered that essential medical equipment alone would be moved and all medical installations would be destroyed before leaving. Medical detachments at Kennedy Peak and Vital Corner were placed under HQ 48th Indian Infantry Brigade for withdrawal, but transport could not be provided and these detachments withdrew to Tiddim after

destroying their equipment. They were however re-equipped by MDS 37 Indian Field Ambulance at Tiddim before the withdrawal commenced. The 63rd Indian Infantry Brigade was already in the north acting as an advanced guard while the 48th Indian Infantry Brigade in the Tiddim area brought up the rear with divisional HQ. On 15 March, HQ was established in the area of MS 142-144. One Coy of 23 Indian Field Ambulance opened an ADS at MS 144 for divisional casualties. From now the field ambulances were obliged to carry forward casualties as there was no means of evacuating them to hospitals. Emergency surgery was undertaken by 10 Mobile Surgical Unit moving with the column and the number of patients increased as the division began to fight its way to the north. On the night of 15/16 March a Japanese "Jitter" party attacked the divisional area and caused about 70 casualties who were admitted to the ADS.

The division began to move north on 17 March when the road in the Tuitam-Tonzang area was reported clear. On 18 March the divisional medical units arrived at the Manipur river bridge area (MS 126) and the site of 36 ISS was taken over by 23 Indian Field Ambulance and a hospital capable of accommodating 300 casualties was established. 10 Mobile Surgical Unit was attached to this hospital. 51 ISS formerly located at Tuitam also moved into the concentration area. On 20 March, 37 Indian Field Ambulance opened a MDS capable of holding 300 casualties in the same area to relieve congestion in MDS 23 Indian Field Ambulance. MDS 37 Indian Field Ambulance was to receive all sick casualties direct as well as transfers from MDS 23 Indian Field Ambulance. Essential medical stores urgently required were supplied by air on 21 March.

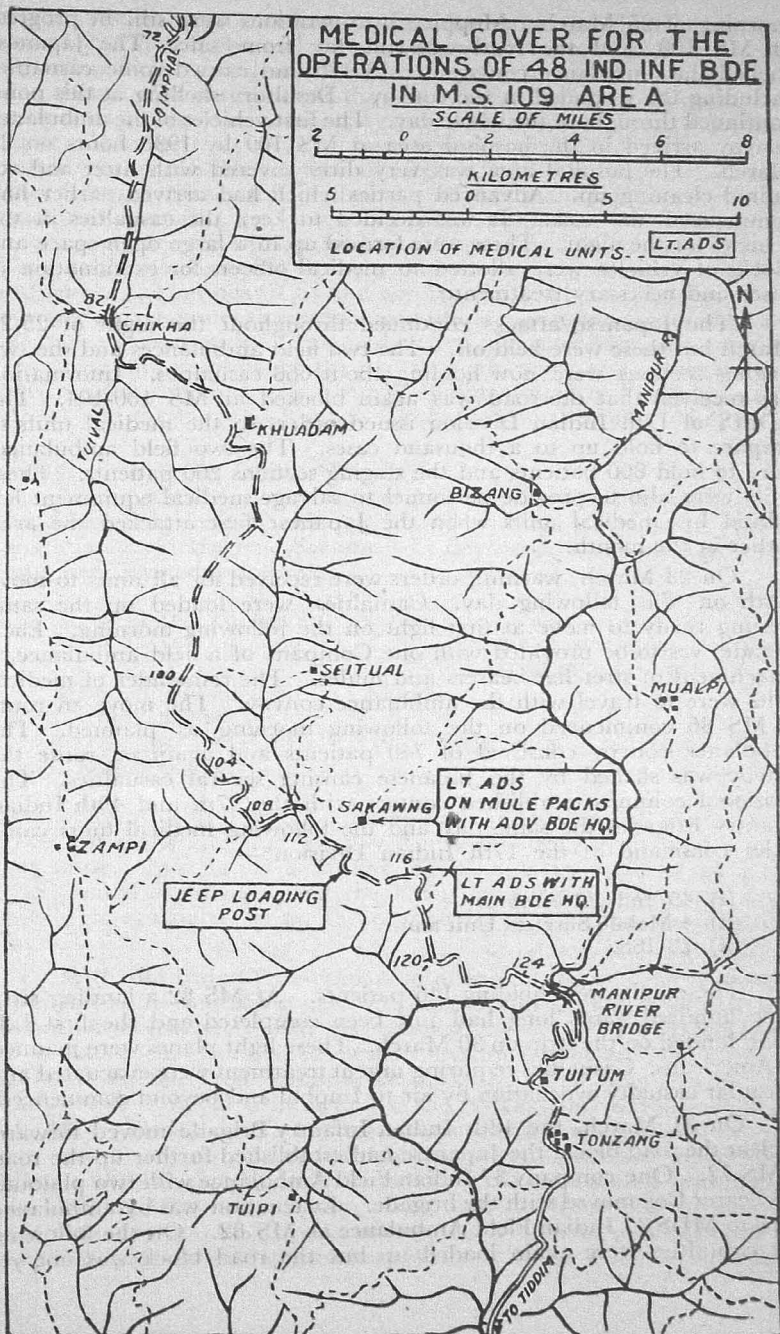
Medical cover for the operations of the 48th Indian Infantry Brigade in MS 109 area was provided as follows:—

Lt. ADS on mule packs
Jeep Loading Post
Lt. ADS

Adv. Brigade HQ at Sawkang
MS 114
Main Brigade HQ at MS 116

20 squads of stretcher bearers were provided at the forward ADS for evacuation of casualties from the forward areas to the jeep loading post. 20 ambulance jeeps were available at this post for evacuating casualties through the ADS to the hospital area at MS 126. 36 and 51 ISSs were instructed to open a section to receive 300 medical cases. This gave a total hospital capacity of 850 in the medical area. During the subsequent operations these arrangements worked satisfactorily and the cover provided was adequate.

On 23 March, orders were received to move to MS 109, and the following arrangements were made for the move. The patients were to be moved in sixty-five ton lorries and unit stores and equipment were to be transported in twenty-five 15-cwt. lorries. The field ambulances were to provide Light ADSs on mule pack for the marching columns of the division. The vehicles for transporting casualties were to have padding of parachutes on the floor, and outer covers of these lorries were rearranged. The move to MS 109 commenced on the



morning of 25 March. Mopping up operations were still in progress at MS 109, and the road was still far from safe. The Japanese shelled the ambulance convoy at MS 120 and caused some casualties including the wounded in the convoy. Desultory shelling at this point continued throughout the whole day. The first vehicles of the ambulance convoy arrived in the hospital area at MS 109 by 1930 hours on 25 March. The hospital area was very dirty covered with litter and required cleaning up. Advanced parties which had arrived earlier had commenced the task. It was decided to keep the casualties in the vehicles for the night. These were formed up in a large open space and blocks of vehicles were allotted to medical officers for examination of cases and necessary treatment.

The Japanese attacks continued throughout the night of 25/26 March but these were held off. The two field ambulances and the two staging sections were now holding about 668 casualties. Information was received that the road was again blocked at MS 100-104. The ADMS of 17th Indian Division issued orders to the medical units to prepare to hold up to a thousand cases. The two field ambulances were to hold 800 patients and the staging sections 200 patients. These units were also to provide personnel to salvage medical equipment left behind by medical units when the Japanese first attacked the area earlier in the month.

On 28 March, warning orders were received for all units to move north on the following day. Casualties were loaded up the same evening ready to move at first light on the following morning. Each brigade was to be provided with one Company of a field ambulance, a detachment of stretcher bearers and mules. The remainder of medical units were to travel with the ambulance convoy. The move en route to MS 86 commenced on the following morning as planned. The ambulance convoy consisted of 740 patients and again en route the convoy was shelled by the Japanese causing several casualties. The divisional columns established contact with the 37th and 49th Indian Infantry Brigades the same day and the following medical units came under command of the 17th Indian Division:—

- (i) 49 Ind Fd Amb
- (ii) 4 Mobile Surgical Unit and
- (iii) 28 ISS.

These units were holding 146 patients. At MS 82 a landing strip three hundred yards long had just been completed and the first L.I. plane landed on the strip on 30 March. These light planes were manned by Americans. Casualties requiring urgent treatment were evacuated and a regular casualty evacuation by air to Imphal and beyond commenced.

On 31 March, the 48th Indian Infantry Brigade moved forward to clear the road block, the Japanese had established further up the road at MS 72. One company 37 Indian Field Ambulance with two platoons of 4 Bearer Coy moved with the brigade. Evacuation was by ambulance jeeps to MDS 37 Indian Field Ambulance at MS 82. On the following day casualties were again loaded up but the road block was not yet

clear. The patients were kept in the vehicles for the night of 1/2 April and at 0900 hours the ambulance convoy moved off direct to Imphal. 49 Indian Field Ambulance together with the sick held by them joined the convoy. Casualties from the 48th Indian Infantry Brigade were to be collected by the ambulance convoy as it moved through the area. Those occurring later were to be evacuated to MDS 37 Indian Field Ambulance at MS 82. A total of 1022 casualties moved in the ambulance convoy. Meanwhile, ambulance aircraft made frequent sorties and evacuated casualties requiring immediate hospitalisation. The ambulance convoy arrived without mishap at Imphal by 2200 hours on 2 April. The casualties were sorted out by a team of medical officers immediately and sent to the various CCSs and hospitals in Imphal. The evacuation was performed under hazardous conditions and often under shell fire. All ranks worked without rest and shared the hardships and none was found wanting in rising to the occasion whenever and wherever their services were required. By 4 April, divisional units had concentrated at MS 41 and the move to Imphal commenced on the following day.

Medical Cover in the Palel-Tamu Sector

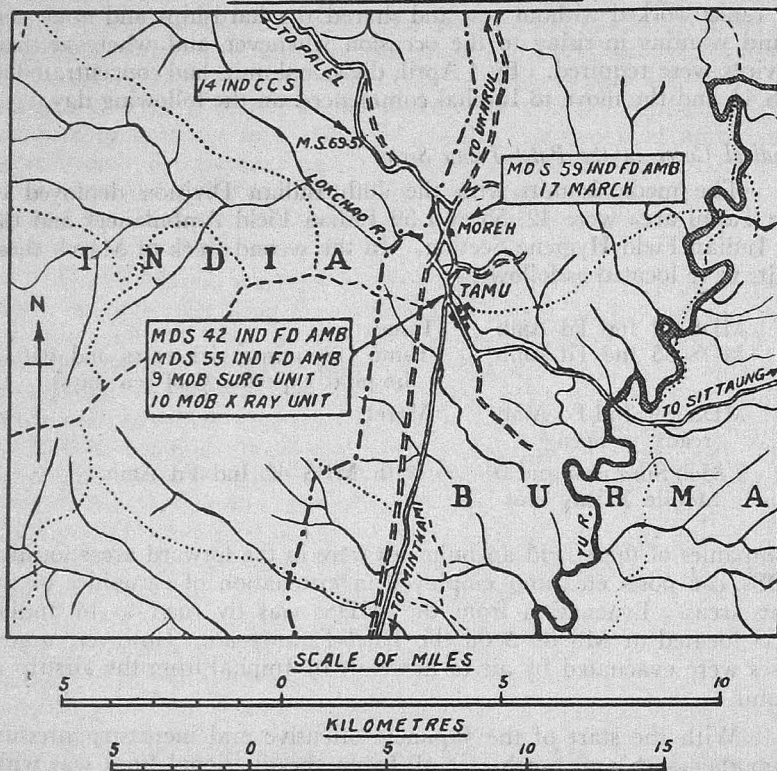
The medical units with the 20th Indian Division deployed in the Tamu area were 42, 55 and 59 Indian Field Ambulances and the 26 Indian Field Hygiene Section. In the second week of March these units were located as follows:—

MDS 42 Ind Fd Amb	Tamu
MDS 55 Ind Fd Amb	Tamu (for minor sick cases and with a hospital expectancy of ten days)
MDS 59 Ind Fd Amb (ready to open)	Moreh
9 Mob Surg unit and 10 Mobile X-Ray unit	With MDS 42 Ind Fd Amb.

Companies of these field ambulances were in the forward areas forming ADSs, car posts etc., and employed in evacuation of casualties to the rear areas. Evacuation from the MDSs was by road to 14 Indian CCS located at MS 69.5 on the Palel-Tamu road. However, urgent cases were evacuated by air to hospitals in Imphal from the airstrip at Tamu.

With the start of the Japanese offensive and increasing pressure from the south and north-east of Tamu the divisional front was withdrawn in accordance with the general plan. On 17 March, MDS 42 Indian Field Ambulance closed down in Tamu and the same day MDS 59 Indian Field Ambulance in Moreh area began to function. The Mobile Surgical Unit as well as the X-Ray Unit was moved to join the MDS 59 Indian Field Ambulance at Moreh. Casualties were very heavy due to severe fighting and several medical officers were killed. On 18 March, HQ 42 Indian Field Ambulance withdrew to the Shenam area. The tempo of fighting increased day by day and casualties mounted up. Evacuation route to the east was still open and casualties were now being evacuated direct to 89 IGH at Palel as 14

PALEL - TAMU SECTOR
LOCATION OF MEDICAL UNITS WITH THE 20 IND DIV
2ND. WEEK OF MARCH 1944



CCS had now closed and moved to Palel to take over from the hospital. On 18 March, 55 Indian Field Ambulance also moved into the Moreh perimeter camp and was kept in reserve. Evacuation of casualties from forward areas under direct observation of the Japanese posts was a hazardous task.

By 20 March, the situation in the forward area had become very critical and the Moreh defences were practically surrounded except the road to the east and fighting became very severe. In spite of all hardships and dangers the medical personnel carried out their duties of collection, treatment and evacuation of casualties with hardly any respite. With the perimeter camp all but surrounded, orders were issued to pull down the *bashas* and accommodate patients in dugouts. This was done without delay and patients now enjoyed some safety from incessant shelling. The surgical unit was very heavily worked. On 29 March, it was decided to evacuate the Moreh position. The same day one company of 59 Indian Field Ambulance moved to MS 21 on the Imphal-Palel road. The MDS 59 Indian Field Ambulance closed down on 31 March and completed its withdrawal to MS 21 Imphal-Palel road on 1 April. This unit came for some shelling en route to its destination. Earlier on 30 March, 55 Indian Field Ambulance withdrew to Khongkhang to the north-west of Sibong and established a MDS there. In the withdrawal of the forward forces severe casualties were to be evacuated directly to MDS 42 Indian Field Ambulance at Shenam whereas all other cases were to be evacuated to ADS 55 Indian Field Ambulance at Khongkhang. The latter were to be evacuated further to MDS 42 Indian Field Ambulance in case it was necessary to do so. With the closing of MDS 59 Indian Field Ambulance at Moreh the mobile surgical and X-ray units moved back to Shenam and rejoined MDS 42 Indian Field Ambulance. With the withdrawal of forward troops MDS 55 Indian Field Ambulance at Khongkhang moved on 4th April to Peacehaven box to the north of Palel (MS 21 area). The only field ambulance left in the forward area now was 42 Indian Field Ambulance at Shenam with 9 Mobile Surgical Unit and one company of 55 Indian Field Ambulance.

55 Indian Field Ambulance opened a MDS in their new location and relieved 59 Indian Field Ambulance which moved to Wangjing on 6 April. The latter field ambulance opened another MDS in their new location for units at the roadhead. After a period of very intense activity these field ambulances now enjoyed some comparative quietness in their new locations which had not yet been endangered. For the two brigades in the forward areas in the Shenam-Tengnaupal-Sita sector HQ 42 Indian Field Ambulance acted as the divisional MDS whilst a company of 55 Indian Field Ambulance was sent to Shenam to serve as ADS in the forward areas. Casualty evacuation from the mountainous areas was difficult. But the stretcher bearers worked unceasingly over this difficult terrain and brought back the casualties with the minimum delay possible. Due to constant contact with the Japanese forces no respite was possible; the medical units had to work without any rest. Casualties were evacuated from the MDS to 14 CCS at Palel.

The 50th Parachute Brigade

80 Indian (Para) Field Ambulance provided medical cover for the operations of this brigade in the Ukhrul-Sangshak sector. This (para) field ambulance consisted of HQ and four sections. On 12 March, one section of this unit moved with a battalion to Ukhrul and on 20 March the rest of the unit (less one section at Jessami) reached Imphal. It moved on the following day to Sangshak via Litan after discarding all heavy equipment. On reaching the new location the unit started to construct dugouts for locating the MDS for the brigade which was in contact with the Japanese forces, but this work was constantly interrupted by Japanese fire. On 22 March, one section which was in Ukhrul withdrew to Sangshak when the battalion evacuated Ukhrul. Fighting had become very severe and the L of C to Imphal had been cut and consequently there was heavy rush of casualties in the MDS. As the forces were more or less encircled supplies including medical stores had to be dropped by air. The supply of essential medical stores saved a complete breakdown of the medical services. Meanwhile, the number of casualties held had increased considerably and the Japanese attacks had increased in intensity. On 24 March, there was a heavy downpour of rain and the whole area became flooded and dugouts had to be abandoned, and it became difficult to keep the casualties warm. On 26 March, the defended perimeter was breached by the Japanese forces near the location of the MDS and the site became insecure. All casualties were, therefore, removed to safer shelters near the HQ of the brigade. The MDS with the operation theatre was moved to the same site. Verbal orders were received from the brigade that the position would have to be evacuated soon. It was decided to move out as many wounded as possible. A selection was made of stretcher and walking cases and the party under an escort of Gurkha troops moved out. Owing to the difficult nature of the terrain and the necessity for moving unobserved the column split up into groups and made their way to Imphal. The main body of the unit withdrew later through Litan. By 30 March, the unit had once again reassembled in Imphal and all the casualties were evacuated to hospitals. The unit had lost one officer and ten other ranks during this period as well as a considerable part of its equipment. On 1 April, the field ambulance was placed under command of the 5th Indian Division and began to reorganise and re-equip.

Medical Cover in IV Corps Area

The following medical units were under command or administrative control of IV Corps before the commencement of the Japanese offensive:—

IV Corps

- 41, 49 and 53 IGH (Comb)
- 59 IGH (IT)
- 64 and 65 Ind Fd Amb
- 77 Fd Amb
- 56 Ind Fd Hyg Sec

14, 16, 19 and 24 Ind CCS
 3 ISS (BT)
 28 ISS (IT)
 36 ISS (Comb)
 3, 10, 11 and 14 Ind Mob XRU
 7, 10, 20, 21, 22, 32 and 45 Ind Anti-Mal Unit
 19 Ind Dent Unit (IT)
 41 Ind Dent Unit (BT)
 9 Ind Dent Mech Unit
 4, 5 and 10 Ind Mob Surg Unit
 7 Ind Surg Unit (ENT)
 15, 16 and 17 ICD (IT)
 27 ICD (BT)
 2 and 32 Fd Transfusion Unit
 30 Ind Fd Lab
 5 Ind Ophthal Unit
 1, 2, 3, 4, 5, 6, 7 and 8 Ind Staging Camp
 45 and 46 Ind Sub Depots Med Stores.

17th Ind Div

23 and 37 Ind Fd Amb (Lt)
 22 Ind Fd Hyg Sec
 3 and 4 Ind Bearer Coy.

20th Ind Div

42, 55, 59 Ind Fd Amb
 26 Ind Fd Hyg Sec.

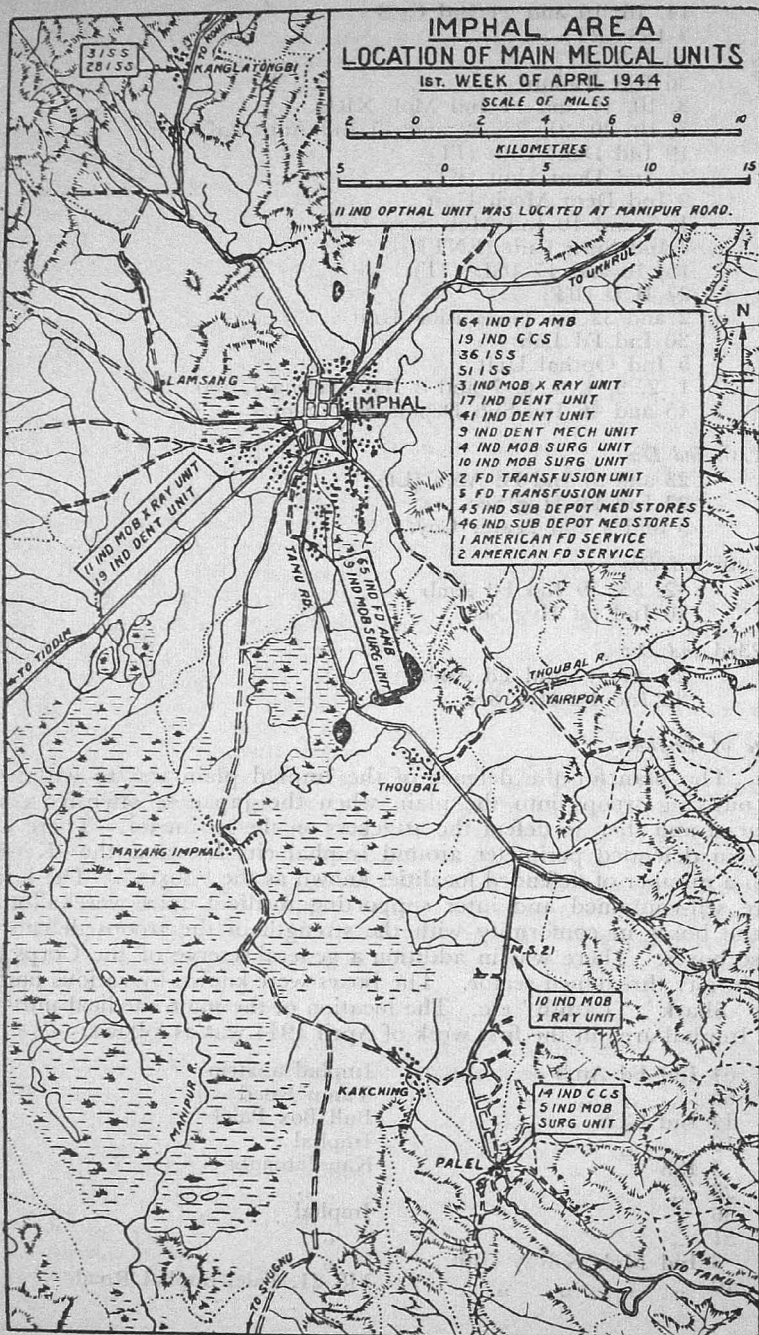
23rd Ind Div

24, 47, 49 Ind Fd Amb
 23 Ind Fd Hyg Sec.

Siege of Imphal

The plan for the defence of the Imphal plain was to withdraw all outlying troops into the plain when the Japanese offensive commenced and then to defeat the attackers on the perimeter. There was a main defended perimeter around Imphal city known as the 'Keep', with a number of defended localities known as the 'boxes'. The latter were self-contained and inter supporting medical units were allotted to the boxes in conformity with the strength of the troops defending these boxes. There was in addition a general reserve of the Corps for use in any threatened sector. The boxes were known by various names like 'Shark', 'Latfish' etc. The location of the main medical units in the Imphal area in the first week of April 1944 was as follows:—

64 Ind Fd Amb	Imphal airstrip
65 " "	Tamu Road
14 Ind CCS	Bull Box Palel
19 " "	Imphal
3 ISS	Kanglatongbi
28 "	"
36 "	Imphal
51 "	"
3 Ind Mob X-Ray Unit	"
10 " " " "	MS 21, Palel-Imphal Road



11 Ind Mob X-Ray Unit	Tiddim Road
17 Ind Dent Unit	Imphal
19 " " "	Tiddim Road
41 " " "	41 CGH Imphal
9 Ind Dent Mech Unit	Imphal
4 Ind Mob Surg Unit	"
5 " " " "	Bull Box Palel
9 " " " "	Tamu Road
10 " " " "	Imphal
2 Fd Transfusion Unit	"
5 " " " "	"
11 Ind Ophal Unit	Manipur Road
45 Ind Sub-Depot Med Stores	Imphal
46 " " " " "	"
1 American Fd Service	"
2 " " " "	"

Evacuation

The normal routes of evacuation on this sector or of the front have been described earlier. With the investment of Imphal only evacuation by air was feasible. On 19 March, orders were issued to vacate the hospital site at MS 116 Manipur road. This site was ready for occupation and equipment and stores were actually on ground when the tactical situation required their immediate removal. 14 BGH and 79 IGH, the hospitals on the site, were immediately withdrawn with most of their equipment to Imphal to be flown out to Comilla as early as possible.

With the investment of Imphal all routes of evacuation by land had ceased and evacuation by air was put into operation for all types of casualties. Originally intended to operate on a minor scale, air evacuation now assumed an importance and reached a scale never visualised before. However, the only aircraft available were the returning transport planes and the evacuation arrangements had to conform to the operation schedule of these planes in the early stages of the siege. This caused some hardship as the casualties had to be transported to the airstrip at Sapam, about 25 miles from the hospital area. The evacuation timings were uncertain and erratic and ambulance convoys had sometimes to return to the hospitals with the casualties after a long wait at the airstrip. As the evacuation by air got into stride and well organised these defects were remedied. The casualties carried by the 17th Indian Division in its withdrawal to Imphal were evacuated within 24 hours, the number so evacuated being 817.

Medical Planning—Fourteenth Army

The medical policy of the Fourteenth Army was originally based on the supposition that the main operational activity would be from the Imphal base forward. Hospitals were, therefore, largely concentrated in the north and on the line of communication from Manipur road to Imphal. The main evacuation route was from Manipur road to Gauhati by rail and thence by river steamer to Sirajgunj wherefrom the casualties were despatched to hospitals in India. The southern sector was considered to be of minor importance and had only

light hospital cover. A moderately large hospital centre was developed at Dacca to take the casualties from the Fourteenth Army area. Earlier change in the plan had shifted the centre of activity to the south rendering the north relatively unimportant but the Japanese offensive changed the situation completely and the northern sector became the chief focus of activity.

The original policy dictated by operational requirements was rigid and inelastic necessitating the movement of hospitals every time the operational plan was changed. Field hospitals could not be easily moved and required adequate buildings especially during the monsoon if they were to function efficiently. Adequate care of patients with resultant improvement of manpower situation cannot be maintained when these units have to work under improvised conditions. Hospitals should be, therefore, located in areas where they could receive the bulk of the casualties without the necessity for frequent or sudden moves. The advent of aircraft as a major means of casualty evacuation made it clear that the main hospital bases should be located in the neighbourhood of the main landing grounds from which these aircraft operate. However, the choice of suitable hospital sites in the army was limited by factors of terrain and communications.

The capacity for the northern evacuation line was limited by the amount of transport available. In addition, adequate reserve beds were not available in the sector to take up the excess load if any exigency arose. Transport facilities to Dacca were limited and they resulted in unused hospital capacity. It was the policy to evacuate only to that place, cases which were likely to recover in six to eight weeks. All cases requiring hospitalisation over this period were evacuated direct to base hospitals in India. The Japanese offensive again brought to light the vulnerability of the line of communication in the north running parallel to the Japanese front, and eventually necessitated the uprooting of over 25 per cent of the hospital cover in this area.

After careful consideration of the above factors it was recommended that the main hospital centres should be located at Shillong, Sylhet, Agartala and Comilla. The decision to form hospital centres at Comilla and Agartala was made because these were the main aerodromes from which Imphal was to be supplied. Sylhet was already receiving casualties by air from the LRP Group and it was decided to increase the bed cover available in the area. These four locations had good inter-communications which could be improved and both Comilla and Sylhet had rail connection with Dacca. The increase in the already existing bed cover was (shown in the diagram) to be effected through the following moves:—

53 CGH	}	To Shillong
25 Ind Con Depot (BT)		
9 MFTU	}	To Sylhet
14 BGH (200 beds)		
51 CGH	}	To Agartala
11 and 12 MFTU		
17 Ind Con Depot (IT)		

19 IGH (on withdrawal from Imphal)	}	To Comilla.
14 BGH (less 200 beds)		
10 MFTU		
21 ICD		

Prior to the Japanese offensive it was estimated that the approximate army strength would be 5,18,000, but subsequently the strength was increased to 6,18,000. Moreover, consequent on the operation's then in progress, it was necessary due to tactical reasons to close down nine general hospitals (a total of 7,100 beds) and move them at a moment's notice. The hospitals were to be resited and put into operation in the shortest possible time.

The distribution of troops at this time was approximately as follows:—

New Formations

XXXIII Corps HQ and Tps	..	..	23,000
36 Br Div	..	..	13,500
2 " " Div	..	..	18,700
3 Ind Div	..	..	23,400
25 " " Div	..	..	19,300
50 P. Bde	..	..	2,100
Total			1,00,000
Previous Strength added	..	..	5,18,000
Total Fourteenth Army			6,18,000

ribution of Troops

Zone I

IV Corps and Tps in Imphal plain (incl 17th, 20th, 23rd and 5th Div—less Bde—50th Para Bde and 256 Sub-area) (less labour removed)	..	1,50,000
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Zone II

XXXIII Corps and Tps (incl 2nd Div, 161st, 23rd, 33rd and Lushai Bdes, HQ 202 Area with 251, 252 and 253 Sub-Area, Fort Hertz, Gref and Labour ..	2,23,000
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Zone III

HQ 404 Area with 452, (excl Chittagong Area) and 257 Sub-Area, 19th Ind Div—Less Bde	..	1,02,000
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Zone IV

XV Corps and Tps (incl 36th, 25th, 81st, 26th and 7th Div—Less Bde, 451 Sub-Area (incl Chittagong)	1,43,000
Total ..	6,18,000

Hospital cover available was located as follows:—

Hospital Beds

Zone I

Open and working	1,800
closed, but can open later when site available	1,400

Total Zone I	..	3,200
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Zone II

Open and working	9,800
Four MFTU now moving in	2,400

Total Zone II	..	12,200
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Zone III

Open and working	3,600
now moving in	1,200

Total Zone III	..	4,800
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Zone IV

Open and working (incl four MFTU)	..	8,500
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Total Fourteenth Army	..	28,700
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Dacca

Open and working	5,900
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Due from India

(38 BGH, 42 IGH, and 8 MFTU)	6,400
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Total cover Fourteenth Army	..	41,000
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Daily admission rate @6.5% per thousand

Zone I	..	980
Zone II	..	1,450
Zone III	..	660
Zone IV	..	930

Total Army	..	4,020
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Estimate of Casualties

Daily admissions to hospitals calculated at the rate of 6.5 per thousand per day amounted to 4,020 admissions per day. The hospital bed cover required was calculated on the basis 90.5 per cent and showed a deficit of 16,800 in the first week of April. This deficiency was to be met by crisis expansion of medical units, by fresh hospitals from India and by evacuation out of the Army area.

Total deficit	..	16,800
Beds expected from India	..	6,400
25% expansion	..	8,000
(25,500 beds available in Zones II-IV)	..	

Deficit	..	2,400
Equivalent for daily evacuation	..	170

Summary of Evacuation

Total maximum absorption capacity of India				538
Evacuated to India daily				
Via Calcutta	..	..	..	200
Via Serajgunj	..	..	..	225
	Total	..		425
Surplus Capacity India	..	.	..	113
Surplus Capacity Dacca	..	..	..	100
Total surplus capacity Ex-Army	..	..	..	213

This surplus absorption capacity was to be utilised by increasing the evacuation by rail, river steamer and air by 170 to offset the deficiency in hospital beds in the Army area itself. In addition, one IGH was released from the Army to revert to India and this hospital was to function at Ranchi which raised the absorption capacity to 573 cases per day in India. Together with the absorption capacity of Dacca this meant that about a thousand casualties could be evacuated every day, in times of extreme stress. This rate of evacuation could, however, be maintained only if the transport facilities were augmented, and the medical administrative authorities in India agreed to do their best to implement this programme.

Within the army itself casualties were to be evacuated by the following methods:—

(1) By Air

From all fronts to the centre mainly to Comilla, Agartala, and Sylhet. It was assumed that returning supply aircraft alone would be used. Supply aircraft returning to India from these stations were also to be utilised. In addition, five or six Anson aircraft fitted to take four or five stretchers each were expected from UK for attachment to transport squadrons specifically for evacuation of casualties. A number of L.G. 5 communication aircraft was also expected from UK which on occasions could be used for the evacuation of casualties.

(2) By Land and River

From Manipur road the casualties were to be routed north-east to hospitals in Dibrugarh and Ledo line and thence by river to Gauhati or Tezpur, or from Jorhat by rail direct to Gauhati. From Gauhati the normal route was by river to Serajgunj and thence to India. Provision was to be made to switch the excess numbers to Shillong and thence to India via Sylhet or via Chittagong. In the south and centre casualties were either routed to Dacca hospitals or to India via Chittagong.

This pattern of grouping hospitals centrally with transit hospitals at the periphery was intended to economise transport and to permit the full use of hospitals without the necessity for constant changes consequent on alteration in the tactical situation. In addition, this disposition of hospitals covered all sectors of the front. Grouping also affects economy in personnel, and it is possible to pool specialists

so that the maximum number of casualties can get to the specialists concerned. Manpower wastage could be avoided by these methods.

The Struggle for Imphal

The Imphal-Dimapur road cut on 30 March, was not reopened until 22 June, and during this period of siege Imphal was supplied by air. The aerial corridor was made tenable through the Allied superiority in the air. The fighting centred round two distinct and independent sectors namely IV Corps in Imphal and XXXIII Corps in the Kohima-Dimapur area. The first phase of concentration of the forces available was completed by the end of the first week of April 1944. By then the 17th Indian Division had fought its way back from Tiddim and was located at Sengmai. The 20th Indian Division was withdrawn from the Kawbaw valley and was concentrated in the Shenam-Palel area, and the 50th Indian Para Brigade had been withdrawn from Ukhrul. The 23rd Indian Division was already available in the Imphal sector. In addition, the Imphal garrison was being steadily reinforced. The 5th Indian Division (less 161st Indian Infantry Brigade) was flown to Imphal from the Arakan and was also concentrated at Sengmai. The main formations under command of IV Corps after these moves were:—

- 17th Indian Division, consisting of 48th Ind Bde and 63rd Ind Bde.
- 20th Indian Division, consisting of 32nd Ind Bde, 80th Ind Bde and 100th Ind Bde.
- 23rd Indian Division, consisting of 1st Ind Bde, 37th Ind Bde and 49th Ind Bde.
- 5th Indian Division, consisting of 9th Ind Inf Bde and 123rd Ind Inf Bde.
- 50th Para Bde, less one battalion.
- 254th Tank Bde and Corps troops etc.

In addition, the 89th Indian Infantry Brigade was flown into the Imphal sector on 18 April in lieu of the 161st Indian Infantry Brigade.

The plan of the commander of IV Corps on 10 April was as follows:—

- (1) To prevent the Japanese from gaining access to the Imphal plain by either the Palel-Imphal or Tiddim-Imphal routes.
- (2) To re-establish a force in Ukhrul area and cut the lines of communication of the Japanese forces from the east.
- (3) To use the largest possible force offensively against either the 15th or the 33rd Japanese Divisions in succession.

The formations were mainly disposed as follows:—

The 20th Indian Division in the Palel-Shenam area was covering the approaches to Imphal from south-east and south. 17th Indian Division was in the Bishenpur sector. The 5th Indian Division was deployed to the left on the Imphal-Kohima Road whilst the 23rd Indian Division was to the right on the Imphal-Ukhrul track. The operations in these various sectors have been described in the volume entitled the 'Reconquest of Burma', in the series of operational history, published by the Historical Section to which reference may be made.

Medical Cover for Indian Division

It was decided on the arrival of the 17th Indian Division in Imphal that the Division HQ and the Divisional troops and medical units should be located in the Catfish box whilst the 48th Indian Infantry Brigade was moved to MS 124 Dimapur-Imphal road and the 63rd Indian Infantry Brigade was located at Sengmai. One company of 37 Indian Field Ambulance, one platoon of 4 Bearer Coy and a detachment of 22 Indian Field Hygiene Section remained under command of the 48th Indian Infantry Brigade whilst one company of 23 Indian Field Ambulance and a detachment of No. 3 Bearer Coy continued to be under command of the 63rd Indian Infantry Brigade. In the early clashes with the Japanese troops casualties were evacuated directly to 41 CGH. The division was placed in command of the operations in the Bishenpur sector by the middle of April and the 32nd Indian Infantry Brigade already in the area came under command. The operations of the division were now conducted on two sectors of the front until the division with the 48th and 63rd Indian Infantry Brigades moved to the Bishenpur area on 11 May.

In the Imphal area the HQ 23 Indian Field Ambulance established a MDS for the division in the Catfish box. This MDS was well-dug in to hold fifty cases with reception and resuscitation wards. However, casualties began to be directly evacuated to the hospitals in Imphal by the third week of April and the MDS thereafter attended to the local minor sick casualties. Owing to the shortage of hospital accommodation in Imphal this MDS was directed to retain sick for 48 hours or more, if necessary. These arrangements worked quite satisfactorily during the period that the 17th Indian Division was in charge of operations in the northern sector, during which time the 48th and 63rd Indian Infantry Brigades though continuously in contact with the Japanese were not involved in major engagements.

The situation to the south of Imphal, where the 32nd Indian Infantry Brigade under command of the 17th Indian Division was barring the Japanese advance to Imphal was, however, quite different. Brisk skirmishes and heavy engagements were common and the medical services had a difficult time in the treatment and evacuation of casualties. It has been mentioned earlier that the 32nd Indian Infantry Brigade was provided with one Coy of 59 Indian Field Ambulance when it came under command of the 17th Indian Division. The company originally intended to function as a full fledged MDS for the brigade. The HQ of 59 Indian Field Ambulance, however, remained with the 20th Indian Division in the Palel sector and did not move into the Bishenpur sector. The medical arrangements for the operation of the 32nd Indian Infantry Brigade were as follows:—

One Coy 59 Ind Fd Amb reinforced by personnel and equipment to function as MDS. Attached (i) Operating team from 80 (Para) Fd Amb of 50th Para Bde (ii) 1 Platoon of 4 Stretcher Bearer Coy.

The evacuation was to be covered by two ambulance cars and three jeeps from the forward areas but evacuation from inaccessible localities was to be carried out by the stretcher bearers. This MDS was located

in the Bishenpur Box area. When the work increased in this area consequent on heavy fighting the second Coy of 59 Indian Field Ambulance moved to Bishenpur to reinforce the company already there, and the whole detachment worked under the direct command of the OC of the field ambulance who also moved to the Bishenpur Box. Casualties in the earlier stages were evacuated by ambulance cars of the AFS to 24 CCS and 41 IGH at Imphal.

On 22 April, one of the companies at Bishenpur moved to MS 22 on the Silchar track to function as an ADS for troops operating in that area. The Japanese attack on this sector was particularly severe and several of the medical personnel including one MO were injured during the shelling. Heavy shelling of the Bishenpur box also commenced but the ADS here was well protected. However, vehicles suffered severe damage and some mules were killed. The continuous establishment of road blocks on the Silchar track made it difficult to evacuate casualties from the forward ADS. Whenever the road blocks were cleared convoys of sick and wounded ran the gauntlet of Japanese sniping to reach Bishenpur. On 30 April, the Silchar track was opened and large convoy of patients came through to Bishenpur. The wounded were in a bad state. Leaves had been used to pad splints as cotton wool was exhausted and wounds were showing signs of severe infection. All cases were admitted to the MDS and prompt medical attention given before evacuation to Imphal. The MDS manned by a single company had done a creditable piece of work in attending to more than 700 casualties in about a fortnight's time but it was yet to win more laurels. Medical supplies including transfusion fluids, stretchers and blankets were in good supply.

It would be now necessary, in view of the complicated operations, to give the medical cover for each brigade separately. HQ 17th Indian Division was established at Sadal Leikai near MS 10 on the Imphal-Tiddim road. During the period of concentration of the 48th Indian Infantry Brigade at Waikhong and in the early stages of the attack to the west all casualties from the brigade had to be evacuated through MDS 55 Indian Field Ambulance located in the Palel sector. The medical cover provided for the operations of the 48th Indian Infantry Brigade in the MS 32 area was as follows:—

One Coy of 37 Ind Fd Amb was to establish an ADS for the brigade near Pt 3404 to the east of the main road. Casualties were to be evacuated from the ADS by stretcher bearers and mules to a boat point on the Manipur river at a village named Ithai and thence by boat to Shaganu where a Lt.MDS and Car Post was established. Casualties were to be evacuated from this point to MDS 47 Ind Fd Amb at Imphal.

The attack was long drawn out and many casualties were sustained. The ADS was established to the north of Point 3404 in a nullah and was well covered and inside the perimeter of the brigade. Casualties began to arrive at the ADS from the first day of the operations but it was only by the afternoon of the second day that evacuation commenced. The evacuation to the boat point was by stretcher bearers and mules and casualties were sent by boat to Shaganu where they were detained for

the night at the Lt.MDS as the road to Palel was not safe. This system of evacuation worked satisfactorily and was continued during the succeeding days of confused fighting. When the 48th Indian Infantry Brigade moved north to Moirang and thence to Ningthoukhong, the ADS conformed to the withdrawal. On 27 May, the ADS was moved to Thamnapoki about a mile to the north of Moirang. The ADS collected casualties on the way and, on the following day, moved to Thinunggei about a mile to the south of Ningthoukhong to receive casualties from the brigade as it was fighting its way to the north. The boat point and the Lt. MDS were withdrawn to Imphal and the evacuation route via Shaganu was closed down. In addition to surface evacuation a landing strip was constructed near the ADS to evacuate urgent cases by light planes direct to Imphal.

In this operation the ADS was not static enough to permit a surgical team to be attached to it but the demands made were so heavy that ultimately four officers had to be posted to the ADS. Forty stretcher bearer squads and thirty eight riding mules were attached to the ADS for evacuation purposes and these proved to be adequate. It was found that in a long carry the minimum number of bearers per squad should be six preferably eight, if available. The bearers should not be employed on any other duties but given sufficient rest when not required for their specific duty. Halts should be regulated and a long mid-day halt should be provided, if possible. A long column should be accompanied by a medical officer. It is advisable that morphia should be administered to selected cases before a column set off. The evacuation from boat point to Shaganu was carried out by pontoons. Each pontoon was fastened to an assault boat and three such boats were available for evacuation which sufficed for the operations in the area. The casualties were accommodated on the pontoons and tarpaulins on a bamboo frame were used for providing shelter. Water was thrown occasionally on the tarpaulins to keep the interior fairly cool. A medical officer travelled with the convoy to attend to any emergencies. The pontoons carried four to six stretcher cases or 16 sitting cases and the assault boat carried four sitting cases. It was essential to provide adequate guard for the convoy. The Lt. MDS received the casualties at Shaganu where accommodation was provided for about 100 casualties which were further evacuated to the Lt. MDS 47 Indian Field Ambulance at Palel. By 30 May, the brigade had reached Ningthoukhong with its ADS. The brigade had brought with it about 120 casualties from the operations during the move. These were staged at the ADS 23 Indian Field Ambulance at Potsangbam and evacuated to hospitals in the Imphal area safely even though the route was being heavily shelled by the Japanese. On 31 May, the ADS was established in Potsangbam.

The ADS remained in Potsangbam till the end of the siege of Imphal whilst the rest of the field ambulance moved to the new divisional area in Imphal on 3 June, on the south-western suburbs of Imphal. The unit was detailed to run a hospital of 100 beds (Rear MDS) for staging and sorting casualties from the southern sector before evacuation to hospitals in Imphal. The unit took over three village houses and two army huts as accommodation for the hospital. The Admin HQ 17th

Indian Division which was located in the Calfish Box moved to the new area on 5 June. The heavy rains during the second week of June completely paralysed the forward medical detachments flooding the bunkers and washing away equipment rendering evacuation of casualties very difficult. With the advent of flood conditions troops began to show incidence of foot rot with swollen feet. Energetic measures were initiated to combat this menace. Extra issues of boots and socks were authorised and prophylactic measures were enforced. These measures checked the infection and the incidence.

The ADS 59 Indian Field Ambulance at Bishenpur with attached units continued to function as the MDS in the Bishenpur area during the operations of the 32nd Indian Infantry Brigade on the Silchar road. In addition, this detachment had to receive casualties from the initial operations of the 63rd Indian Infantry Brigade to the south of Bishenpur. On 13 May, the HQ, 59 Indian Field Ambulance which was functioning in the Palel area was ordered to move with the 20th Indian Division to Ukhrul area. The fighting was of a very confused nature and during the night of 20/21 May the ADS at Bishenpur was cut off in the north by Japanese troops which gained contact with the divisional Box at MS 11. During the following day there was a heavy inrush of casualties to the ADS 59 Indian Field Ambulance with no reasonable prospect of evacuating them. The ADS was holding as many as 137 cases. By 23 May, the Japanese had been forced back and evacuation lines were re-established two days later. After the carnage was over the area was littered with dead mules and Japanese which were fast decomposing rendering an unbearable stench. Burial parties were organised with the troops having a first field dressing impregnated with a deodrant tied across the nose to counteract the smell.

In the early stages after the road was reopened it was possible only to evacuate casualties by jeep as the road was still under fire, but by 29 May the ADS 59 Indian Field Ambulance had been cleared. During the period ending with 31 May this ADS which had been reinforced in personnel and equipment had dealt with over 2,000 casualties during the preceding six weeks and virtually performed the functions of an advance field hospital. A surgical team and detachments of a field hygiene section and anti-malaria unit were also attached to this ADS. For evacuation purposes one platoon of a bearer company, a detachment of jeeps, and a detachment of American Field Society ambulance were available. The latter voluntary organisation performed its tasks in the face of grave dangers and had frequently to run the gauntlet of heavy mortar and machine gun fire, and its services were gratefully appreciated. Although the ADS was primarily intended for the 32nd Indian Infantry Brigade it had at times to receive casualties from other sectors of fighting as well and at times this single company of field ambulance was serving about twelve battalions. The evacuation of casualties in this sector was far from easy even under the best of conditions. These further deteriorated when the rains broke and rendered all communications extremely difficult. In spite of all these shortcomings medical work was carried on without any breakdown at all during this critical period.

On 7 June, orders were received by the ADS to move with the 32nd Indian Infantry Brigade to the roadhead (MS 22½) on the Silchar track. On the following day the hospital was handed over to 23 Indian Field Ambulance and the ADS moved to its new location. The ADS commenced functioning on 9 June and evacuation was to MDS 23 Indian Field Ambulance at Bishenpur by jeeps even though the track was hardly jeepable after the rains. For the attack on Kungpi the same night a car post was established about a mile forward the ADS. Casualties began to arrive from the morning of 10 June. After resuscitation casualties were evacuated by jeep ambulances. The evacuation route was very bad and considerable delay occurred in reaching the MDS. These medical dispositions were maintained until the opening of the Imphal-Kohima road on 22 June.

The ADS for the 63rd Indian Infantry Brigade in its operations in the Bishenpur sector was provided by one company of the 23 Indian Field Ambulance. The HQs of this field ambulance remained in the Catfish box in Imphal during the major part of this period. The ADS was first established at Oinam in the MS 12 sector where the brigade first concentrated, prior to the commencement of the operations. On 10 May the ADS moved forward with the brigade and established an ADS in the MS 18 sector. The ADS was forced to withdraw due to heavy shell fire the same day to the defended perimeter held by the 32nd Indian Infantry Brigade. Evacuation from forward areas was very difficult owing to the terrain, and relay posts had to be established forward of the ADS where medical aid was provided in transit. From ADS the casualties were evacuated direct to hospitals in the Imphal area. The evacuation routes were not safe due to sniping and had to be carried out under heavy escort, and only evacuation during the day was permitted. Urgent cases, however, were evacuated to the Lt. MDS 59 Indian Field Ambulance in Bishenpur whenever necessary. Casualties among stretcher bearers in forward areas were considerable.

On 17 May, the 63rd Indian Infantry Brigade was ordered to advance towards Kha Aimol and a detachment of 23 Indian Field Ambulance moved with the brigade. A Lt. ADS was established at the village of Chothe to the west of the road in MS 18 area. The ADS was heavily shelled and had to move out to a nullah just north of Kha Aimol itself which afforded good cover. A jeep post was established in Chothe village later in the day for evacuation of casualties to Imphal. The 23 Indian Field Ambulance also sent a detachment to the main Divisional Box which the Japanese forces had attacked. On 20 May, the Lt. ADS again came in for some heavy shelling as it was outside the defensive system in this area for some unknown reason. However, no casualties occurred as the Lt. ADS was located in a nullah and all personnel and patients were in the nullah at the time the shelling commenced.

With the blocking of the road just north of Bishenpur on 20 May casualties could not be evacuated to Imphal and the ADS was instructed to despatch all casualties to the Lt. MDS 59 Indian Field Ambulance in Bishenpur. The influx of casualties was, however, so heavy that some were carried round the road block and evacuated direct to Imphal. All

urgent cases requiring surgical treatment were evacuated to MDS 59 Indian Field Ambulance where a surgeon was available. On 6 June, the Lt. ADS was again shelled this time receiving a direct hit. The patients were under cover but one medical officer and three other ranks were killed and four wounded including one medical officer. Some stores and equipment were also destroyed. On 7 June, the ADS moved to Bishenpur on the withdrawal of the 63rd Indian Infantry Brigade and took over the MDS of 59 Indian Field Ambulance and commenced to receive casualties from the other brigades of the division as well. Rains had now set in making evacuation difficult. These dispositions were, however, maintained until the end of the operations.

The nature of the terrain and the confused fighting made it impossible to have any set design for medical dispositions during the course of these operations, and improvisations were usually the rule. That these improvisations worked satisfactorily despite the strain of severed communications, shelling etc., reflect credit to the medical services and their devotion to duty under arduous circumstances. Nor could it have been otherwise from these battle trained veterans of this formation which had been almost continuously employed in the fighting in Burma. One company of 59 Indian Field Ambulance suitably reinforced served as the MDS and later as a small field hospital whilst ADSs of the field ambulances served with their respective brigades. The usual pattern of evacuation was followed. Casualties were brought by stretcher bearers from forward areas to the ADS where resuscitation and necessary treatment was given and the patients were conveyed by stretcher bearers or by river to a car post and thence by jeep or ordinary ambulances to the MDS or direct to hospital whichever was more convenient subject to operational exigencies. The pattern varied according to nature and conditions of communications available and the distances to be covered, the prime consideration being to afford resuscitation facilities and surgical treatment as far forward as possible.

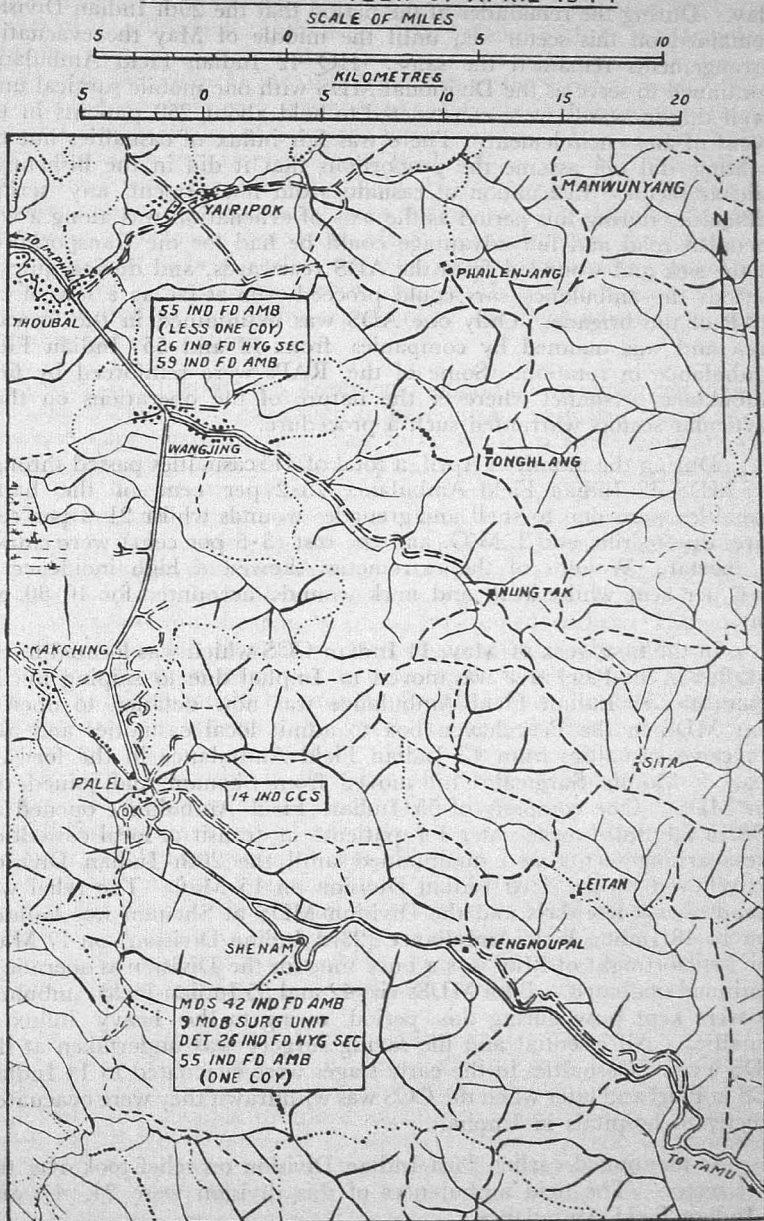
Palel Sector

The medical arrangements on the withdrawal of the 20th Indian Division from the forward areas of this sector have already been described in detail. The forward dispositions of medical units were as follows at the end of the first week of April:—

42 Ind Fd Amb	MDS	} Shenam
9 Mob Surgical Unit		
Det 26 Ind Fd Hyg Section		
55 Ind Fd Amb (One Coy)		Shenam
55 Ind Fd Amb (less one coy)		Peacehaven box of Wangjing.
26 Ind Fd Hyg Section		—do—
59 Ind Fd Amb		Near Wangjing.

The continuous operations made it impossible for the medical units to settle down. Casualties from the forward areas in the Tengnonpal area were evacuated by stretcher-fitted jeeps to the ADSs and thence to MDS 42 Indian Field Ambulance at Shenam. Casualties were further evacuated to 14 Indian CCS at Palel and thence to hospitals in the Imphal area. One company of 59 Indian Field Ambulance left on 12 April

PALEL SECTOR
FORWARD DISPOSITIONS OF MEDICAL UNITS
END OF FIRST WEEK OF APRIL 1944



with the 32nd Indian Infantry Brigade to function under command of the 17th Indian Division HQ and 59 Indian Field Ambulance itself moved to Kakching about four miles to the west of Palel on the same day. During the remainder of the period that the 20th Indian Division remained on this sector i.e., until the middle of May the evacuation arrangements remained the same. HQ 42 Indian Field Ambulance continued to serve as the Divisional MDS with one mobile surgical unit. Well dug-in wards were constructed to hold about 250 patients in the event of any encirclement. There was fair influx of casualties but the fighting did not assume the proportions that it did in the Bishenpur-Silchar sector. Evacuation of casualties did not present any serious difficulties during this period as the axis of evacuation was along a well metalled road and full advantage could be had for the transportation of the sick and wounded from the ADS rearwards, and during quicker periods the ambulance cars could proceed even as far as a few of the RAP of the brigade. Only one ADS was maintained in the forward area and was manned by companies from 42 and 55 Indian Field Ambulance in rotation. Some of the RAPs were reinforced by field ambulance personnel wherever the nature of the operations on their particular sectors warranted such a procedure.

During the month of April, a total of 315 casualties passed through the MDS 42 Indian Field Ambulance 75.2 per cent of the battle casualties were due to shell and grenade wounds whilst 21.3 per cent were due to rifle and L.M.G. and the rest (3.5 per cent) were caused by mortar. Wounds of the extremities showed a high incidence of 75.6 per cent whilst head and neck wounds accounted for 10.80 per cent.

In the first week of May, 14 Indian CCS which was located in the Bull Box in the Palel area was moved to Imphal due to sniping by the Japanese. 55 Indian Field Ambulance was now detailed to open a Rear MDS in the Peacehaven box to admit local casualties and also to receive casualties from 42 Indian Field Ambulance in the forward area. 9 Mobile Surgical Unit moved from Shenam and joined the rear MDS. One company of 55 Indian Field Ambulance opened an ADS in the Bull Box to cater for patients in transit or local casualties. These arrangements were maintained until the 20th Indian Division was relieved by the 23rd Indian Division on 15 May. The relief was spread over a few days and the Division MDS at Shenam was handed over to 49 Indian Field Ambulance (23rd Indian Division) on 17 May. The first fortnight of May was a busy time for the Division as operations continued unabated. Both MDSs viz. 42 and 55 Indian Field Ambulances were kept busy during this period owing to the heavy influx of casualties. All essential and life saving surgery was undertaken at the MDS level. Casualties in the early stages were evacuated to 14 Indian CCS in Palel and later when the CCS was withdrawn they were evacuated directly to hospitals in Imphal.

As mentioned earlier 23rd Indian Division on relief took over the Palel sector. The field ambulances of this division were 24, 47 and 49 Indian Field Ambulance.

The relief was completed by 25 May. 24 Indian Field Ambulance continued at Thoubal (MS 14 Imphal-Palel road). 49 Indian Field Ambulance moved to Shenam and took over from 55 Indian Field Ambulance on 16 May. The medical arrangements remained the same as that of the 20th Indian Division. The 1st and 37th Indian Infantry Brigades actively enjoyed in the operations and ADS were provided by the 24 and 49 Indian Field Ambulances far in the forward areas. The ADS for the former brigade was located at 'Hambone' a location between Sita and Lertan whilst ADS for the latter was located forward of MDS to the north of the Imphal-Tamu road. The rear MDS at Palel (Bull Box) was expanded to hold 150 patients with additional accommodation for reception, resuscitation etc. 10 Mobile Surgical Unit with the Division joined this MDS. Evacuation to the rear areas was carried out as before when the 20th Indian Division was in control of this sector. Ambulance cars of det. of MAS and American Field Service as well as the ambulance cars of the field ambulances were available for evacuation.

With the regroupings completed operations commenced again. The area of operations comprised of hilly terrain with bad communications and once again recourse had to be made to stretcher bearers, to evacuate casualties from the fighting zone as well as from ADSs to the main road wherefrom ambulance cars evacuated casualties to the MDS and beyond. In the absence of a CCS in the forward area the rear MDS was in fact carrying out the functions of CCS. When the operations of the 48th Indian Infantry Brigade commenced to the east of Imphal-Tiddim road on 17/18 May casualties were evacuated by 37 Indian Field Ambulance to the rear MDS as mentioned earlier. Evacuation from the 1st Indian Brigade sector proved particularly difficult as its troops were deployed over a wide area to the north of the Palel-Tamu road. Casualties had to be brought from ADS at Hambona either by mules or stretcher bearers to Sengmai Turel to the north-east of Palel, where a car post was established. From the car post ambulance cars evacuated the casualties to the rear MDS which had received 1,297 casualties for the second fortnight out of which 618 were battle casualties. In addition, over a hundred operations were performed at this MDS. The MDS at Shenam was also kept fully busy but evacuation routes in this sector were easier. Casualties from this MDS were evacuated either direct to the hospitals in Imphal or to the rear MDS as circumstances warranted. Absence of any serious air attacks during this period ensured safe journey for the casualties except for sporadic shelling by isolated Japanese parties, which was soon brought under control.

In the early days of June, operations were carried out in particular sectors. Wherever their deployed strength warranted, additional medical personnel were provided or a detachment of 47 Indian Field Ambulance was detailed to afford adequate medical cover. Evacuation pattern detailed was followed in all these cases. There was another moderately heavy influx of casualties during the final attack by Japanese in this sector of the front on 17 June, but the medical arrangements proved to be adequate and satisfactory.

Medical cover for operations in the Litan Road Sector

The operations in this sector were undertaken by the 32nd Indian Infantry Brigade under command of the 23rd Indian Division. The brigade headquarters was established in the Wangjing area. 59 Indian Field Ambulance moved to the same area on 5 April from the Peachhaven box (MS 21 Imphal-Tamu Road). The operations to harass the Japanese L of C to the east were very complicated and were undertaken by individual battalions advancing in different directions. One Medical Officer with 2 squads of stretcher bearers and 6 mules was attached to each battalion. The MDS was established in Wangjing by 59 Indian Field Ambulance whilst a car post was established to the east of Yairipok. Two ambulance jeeps were stationed at the car post for evacuation of casualties to the MDS. Casualties were few and evacuation proceeded satisfactorily. On 10 April, the 32nd Indian Infantry Brigade handed over the sector to the 1st Indian Infantry Brigade and 59 Indian Field Ambulance moved to Bull Box in Palel.

All the formations and units of the 23rd Indian Division were by now concentrated in the Langthoulal-Waithou-Thoubal sector. Only two field ambulances of the Division, namely 24 and 47 Indian Field Ambulances, were in this area at Waithou and the third 49 Indian Field Ambulance was still functioning at MS 29 Imphal-Tiddim Road. 47 Indian Field Ambulance was detailed to provide medical cover for the ensuing operations of the 1st and 37th Indian Infantry Brigades. One Coy of 47 Indian Field Ambulance with 10 Mobile Surgical Unit was detailed to accompany the 1st Indian Infantry Brigade moving up the Thoubal Valley. This medical party moved on 10 April in M.T. up to Tumukhong and from thence on mule pack basis with the brigade. A car post was also established at Tumukhong by 47 Indian Field Ambulance for evacuating casualties brought from the brigade to the roadhead. On 15 April 49 Indian Field Ambulance opened a Lt. ADS at Yairipok for staging casualties from the forward areas to hospitals in Imphal. On 18 April the same field ambulance took over the car post at Tumukhong from 47 Indian Field Ambulance and all evacuations in this sector thereafter became a responsibility of 49 Indian Field Ambulance. Earlier the 37th Indian Infantry Brigade (23rd Indian Division) which was concentrated in the Yairipok area moved to Kameng on 12 April. The second company of 47 Indian Field Ambulance was attached to this brigade and moved with it to Kameng where it established an ADS the same day. The HQ of this field ambulance however remained at Waithou as casualties were directly evacuated to Imphal. In this sector also casualties were not very heavy and evacuation proceeded smoothly. The base hospitals at Imphal were about eight miles from the ADS at Kameng and evacuation along a good road for this short distance did not present any problems.

By 22 April, the 1st and 37th Indian Infantry Brigades had established contact and there was no longer any need for the southern evacuation route along difficult terrain, as both the brigades were on the same axis. The ADS 47 Indian Field Ambulance moved up the Litan Road to Yaingangpokpi, approximately midway between Litan and

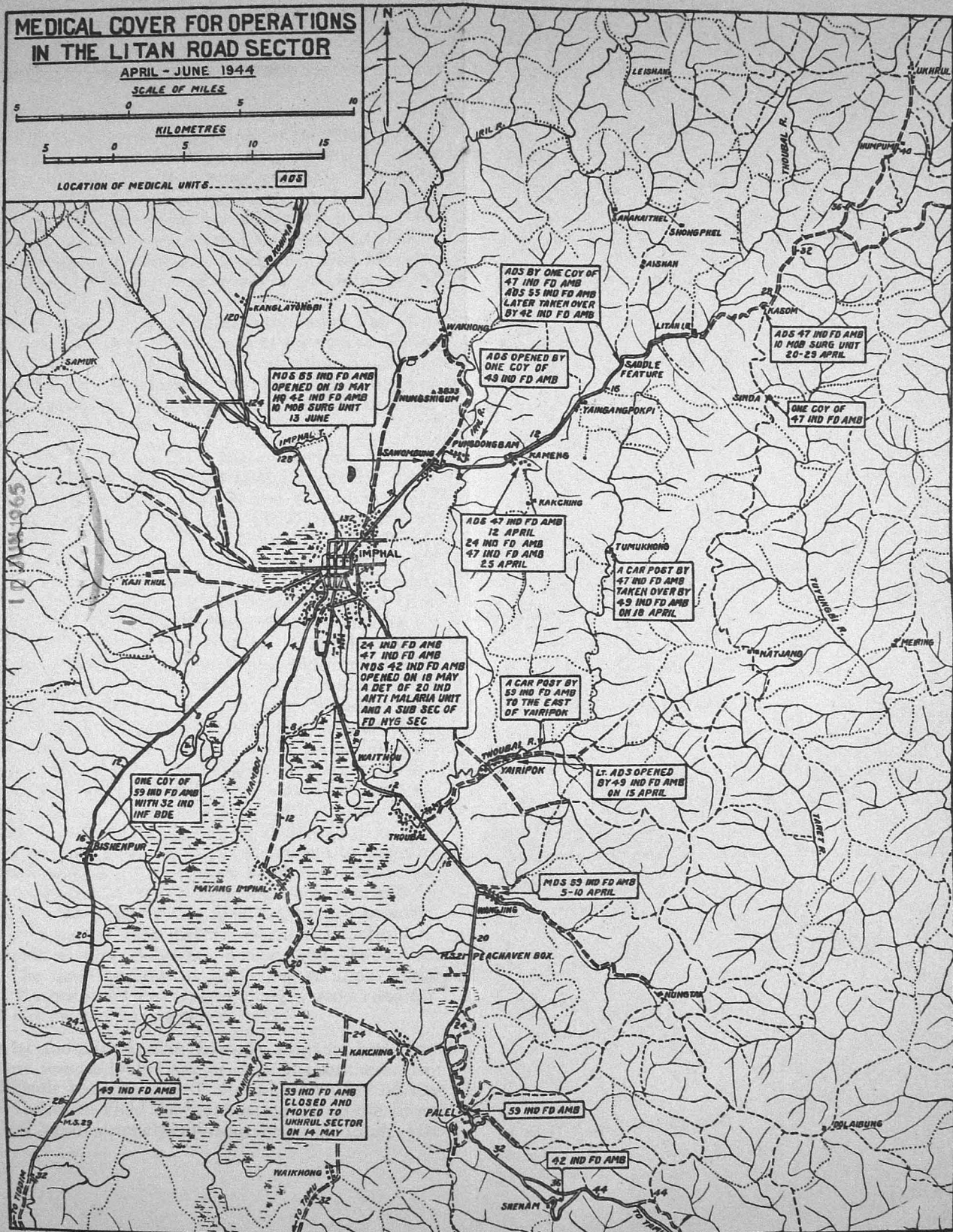
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SCALE OF MILES

SCALE OF MILES

KILOMETRES

LOCATION OF MEDICAL UNITS

ADS



Kameng, and later moved to the Saddle feature, about two miles to the west of Litan, which had earlier been the scene of heavy fighting. The 1st Indian Infantry Brigade was now in the Kasom area and one Coy of 47 Indian Field Ambulance which had accompanied the brigade earlier was functioning at Sinda (RK 6975). On 22 April evacuation from both the brigades commenced along the axis Imphal-Litan Road. HQs 47 and 49 Indian Field Ambulances were moved up to the Kameng area by 25 April, but no MDSs were established in the area as no heavy engagements were in progress and such casualties as occurred could be easily evacuated to Imphal. One Coy of 49 Indian Field Ambulance opened an ADS at Pungdongbam in this area to cater to the local casualties. The ADS of the 37th Indian Infantry Brigade (47 Indian Field Ambulance) and 10 Mobile Surgical Unit which were moved to Kasom on 26 April, continued to function there until 29 April when they closed down and joined the 47 Indian Field Ambulance in the Kameng area. During the whole of this period the 24 Indian Field Ambulance remained at Waithou in the Divisional area.

Earlier a joint operation was conducted to the north of Litan Road in the Shongphel area in the last week of April. No large scale engagements developed in these operations. One Coy of 47 Indian Field Ambulance which was running the ADS on the axis of evacuation (Litan-Imphal) at the Saddle feature, moved to Aishan about four miles to the north-west of Litan, leaving a car post at the former location. Casualties in this operation were not heavy and were evacuated from both the brigades to this ADS and later through the car post to Imphal. In the first week of May no operations of any size were undertaken. The 1st Indian Infantry Brigade was withdrawn to Wangjung. From 12 May the relief of 23rd Indian Division by 20th Indian Division commenced.

On relief of 23rd Indian Division by the 20th Indian Division, 42 Indian Field Ambulance of the latter division, which was located at Shenam, moved to Waithou and relieved 24 Indian Field Ambulance which was functioning there and opened a MDS for the division on 18 May. A detachment of 20 Indian Anti-malaria Unit and a subsection of field hygiene section was attached to the MDS whose commitments at this stage, were (1) medical care for the troops in the area, (2) sanitation and hygiene of the area, and (3) enforcement of anti-malaria measures, 55 Indian Field Ambulance and HQ 59 Indian Field Ambulance and one Coy moved with the brigades to the north where operations were to be undertaken by the 20th and 100th Indian Infantry Brigades. It will be remembered in this connection that one Coy of the latter field ambulance was functioning with the 32nd Indian Infantry Brigade in the Bishenpur sector.

55 Indian Field Ambulance moved with the 80th Indian Infantry Brigade and reached Kameng on 17 May but the site was found unsuitable for opening a MDS. On the following day the field ambulance moved to MS 2 Imphal-Ukhrul Road, but this site was also not favoured. Eventually on 19 May the MDS was opened at MS 7½ where the brigade HQ was also located. 59 Indian Field Ambulance closed at Kakching

and moved with the 100th Indian Infantry Brigade to the Ukhrul sector on 14 May. The HQs was divided into two groups, one group moving with the brigade to the Saddle Area to function as ADS and the other was located at MS 10½ to stage casualties through to Imphal.

In the early stages of the operations the medical layout remained the same and evacuation from both brigades was to the hospitals in Imphal area. The routes were good and the distances involved were never more than ten miles. Owing to the forward location of the ADS 59 Indian Field Ambulance at the Saddle, facilities for emergency surgery were provided at the ADS. In fact the ADS was performing all the functions of a full-fledged MDS. Wards and operation theatre were dug in and made splinter proof. This construction work was undertaken by the field ambulance personnel themselves and was finished in record time. The MDS 55 Indian Field Ambulance at MS 7½ Imphal-Ukhrul Road received casualties from both brigades and evacuated them to hospitals in Imphal. The medical arrangements for the operations in June were as follows. The 80th Indian Infantry Brigade which was pushing up the Iril valley was to have one and a half companies of 55 Indian Field Ambulance with a surgeon and surgical equipment to provide medical cover. This detachment was to have 22 mules for transportation and evacuation purposes. In addition arrangements were made for evacuating casualties by boat down the River Iril or by air from forward landing grounds if the need arose. HQ 55 Indian Field Ambulance was to open a MDS at MS 2 Imphal-Ukhrul Road. On 8 June, 42 Indian Field Ambulance moved from Waithou to the Ukhrul sector and relieved the 55 Indian Field Ambulance HQ. HQ 42 Indian Field Ambulance remained at Sawombung-Imphal-Ukhrul road whilst one and a half companies moved to Saddle area and took over the site of the ADS formerly occupied by 55 Indian Field Ambulance. As the 100th Indian Infantry Brigade was going to operate in mountainous terrain 12 stretcher bearer squads were also allotted for carrying the casualties to the ADS.

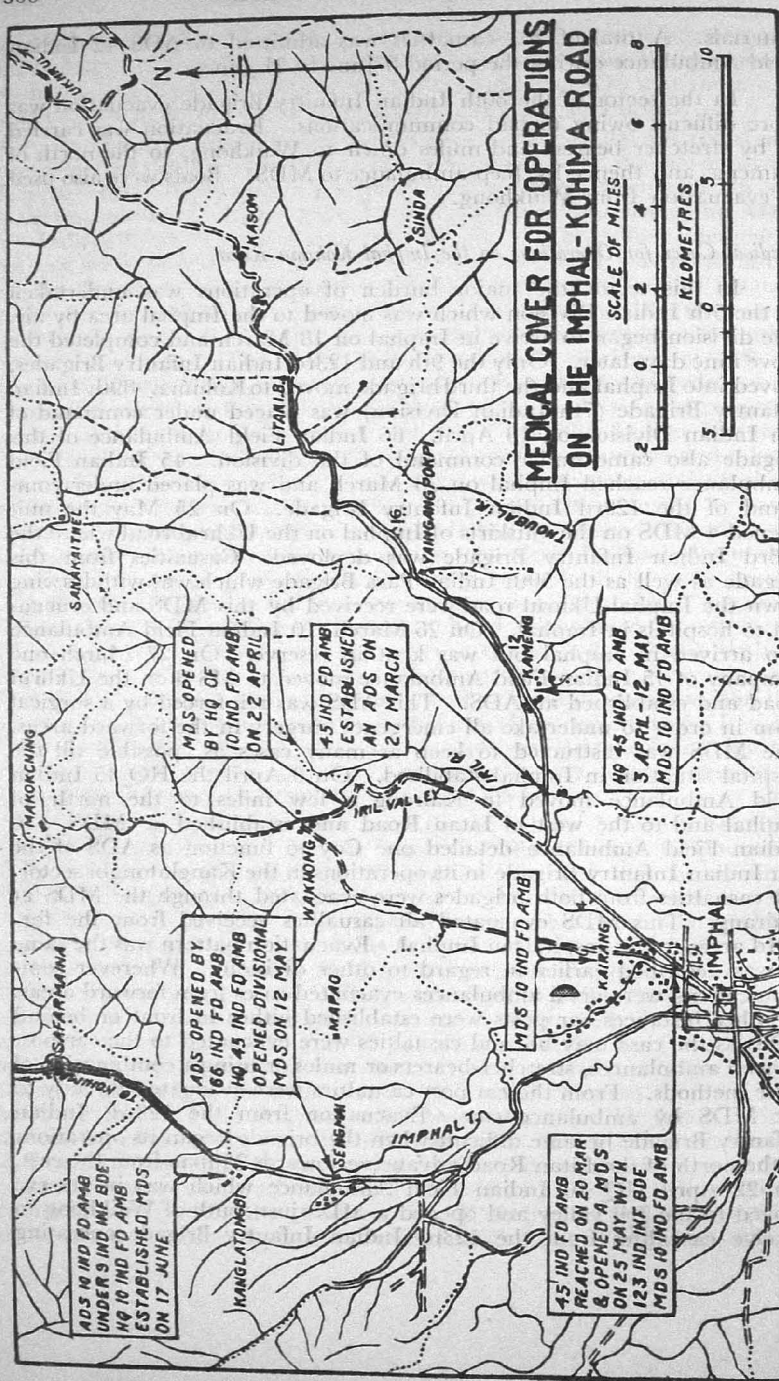
All medical arrangements were completed by 8 June when the operations commenced. On the same day the Division HQ moved from Waithou to Sawombung. Casualties were not very heavy and evacuation proceeded satisfactorily. In the hill valley evacuation was difficult owing to the bad terrain, and 10 jeep ambulances were used to convey casualties from the car posts to the MDS and further back. On 10 June the ADS 42 Indian Field Ambulance was shelled but owing to the blast-proof roofing and underground shelter being available, no casualties were caused and work was never interrupted. The fighting was very severe during 11 and 12 June but casualties were evacuated to the ADS expeditiously by the stretcher bearers, often working under considerable danger to themselves. 10 Mobile Surgical Unit joined MDS 42 Indian Field Ambulance at Sawombung on 13 June. With the rise in tempo of the operations the site of the ADS became untenable and on 17 June the ADS was moved back a mile to the area near the road which was comparatively safer. The rains had also set in making communications difficult. Construction of shell-proof accommodation commenced the same day but was considerably delayed owing to lack of

materials. A total of 203 casualties was admitted to ADS 42 Indian Field Ambulance during the period 8 June to 21 June.

In the sector of the 80th Indian Infantry Brigade evacuation was more difficult owing to bad communications. Evacuation was carried on by stretcher bearers and mules down to Waikhong, to the north of Kameng, and thence by Jeep ambulance to MDS. Boats were also used in evacuation from Waikhong.

Medical Cover for Operations on the Imphal-Kohima Road

In this sector the major burden of operations was undertaken by the 5th Indian Division which was moved to the Imphal area by air. The division began to arrive in Imphal on 18 March and completed the move nine days later. Only the 9th and 123rd Indian Infantry Brigades, moved into Imphal and the third brigade moved to Kohima. 89th Indian Infantry Brigade (7th Indian Division) was placed under command of 5th Indian Division on 18 April. 66 Indian Field Ambulance of this brigade also came under command of the division. 45 Indian Field Ambulance reached Imphal on 20 March and was placed under command of the 123rd Indian Infantry Brigade. On 25 May the unit opened a MDS on the outskirts of Imphal on the Ukhrul road where the 123rd Indian Infantry Brigade was deployed. Casualties from this brigade as well as the 50th Indian Para Brigade which was withdrawing down the Imphal-Ukhrul road were received by this MDS and evacuated to hospitals in Imphal. On 26 March, 10 Indian Field Ambulance also arrived in Imphal but was kept in reserve. On 27 March one company of 45 Indian Field Ambulance moved to MS 8 on the Ukhrul Road and established an ADS. This ADS was reinforced by a surgical team in order to undertake all emergency surgery in the forward areas. The MDS was instructed to keep as many cases as possible till the hospital situation in Imphal stabilised. On 3 April the HQ 45 Indian Field Ambulance moved to Kairang a few miles to the north of Imphal and to the west of Litan Road and established a MDS. 10 Indian Field Ambulance detailed one Coy to function as ADS of the 9th Indian Infantry Brigade in its operations in the Kanglatongbi sector. All casualties from both brigades were evacuated through the MDS at Kairang. This MDS evacuated all casualties received from the forward areas to the hospitals in Imphal. Evacuation pattern was the same as was described earlier in regard to other divisions. Wherever communications were good ambulances evacuated cases from forward areas. In other instances car posts were established either in front or behind ADSs as the case may be, and casualties were evacuated to the car post by jeep ambulances, stretcher bearers or mules or using a combination of these methods. From the car post casualties were evacuated directly to the MDS by ambulance cars. Evacuation from the 123rd Indian Infantry Brigade became difficult when the brigade began its operations to the north of the Litan Road advancing towards Mapao from the east. On 22 April HQ 10 Indian Field Ambulance which was in reserve moved to the Iril valley and opened a MDS just south of Waikhong to receive casualties from the 123rd Indian Infantry Brigade operating



to the west. Three car posts were also established for the battalions of the brigade and casualties were evacuated to Imphal.

Mapao was occupied, but Molvom in that area defied capture being held in strength by the Japanese. It was then decided to clear the Iril valley before launching attack on Malvom from the north-east. Little success was achieved by the movement. The 123rd Indian Infantry Brigade was withdrawn from the valley and moved to Sengmai. With this change in the plan of operations certain alterations in medical layout were also effected. 66 Indian Field Ambulance opened an ADS a mile to the south of Sengmai to afford medical facilities for the 89th Indian Infantry Brigade which was to hold the Sengmai area. 45 Indian Field Ambulance closed down at Kairang and moved to the same area on 12 May and opened a MDS for the 123rd Indian Infantry Brigade operating to the north. The 9th Indian Infantry Brigade which was to operate in the Iril valley was provided a MDS by HQ 10 Indian Field Ambulance which moved to a location about 10 miles to the north of Imphal and connected to it by a non-metalled road. These medical rearrangements were completed by 13 May, and the operations commenced on 15 May. A detachment of 45 Indian Field Ambulance accompanied the 123rd Indian Infantry Brigade in its advance and received casualties from the RAPs to the MDS. Evacuation from MDS was to hospitals in Imphal. Casualties were not serious, the medical cover provided was adequate and the arrangements worked smoothly. However the advent of the monsoon later in the month made evacuation along roads a matter of some difficulty.

The final operations were to commence on 7 June. One Coy each of 10 and 45 Indian Field Ambulance was brigaded with the 9th and 123rd Indian Infantry Brigades respectively to move forward with the brigades and function wherever required. The locations of the MDSs were also changed. HQ 45 Indian Field Ambulance opened the Divisional MDS in the site formerly occupied by 66 Indian Field Ambulance south of Sengmai. HQ 10 Indian Field Ambulance also moved to the same area and remained in reserve. Evacuation followed the usual pattern and the MDS evacuated casualties to Imphal retaining minor sick and wounded. The operations were spread over a wide area of difficult terrain and long hand carriage of casualties was necessary from the troops fighting in inaccessible areas. The river Imphal Truel was flooded after the rains and it was difficult to get casualties across the river, and sling trollies were established just south of Safarmaina to evacuate casualties from the troops operating to the east of the road and river. With the advance rolling to the north the need for a forward MDS became evident. On 17 June HQ 10 Indian Field Ambulance moved to Kanglatongbi and established a forward MDS. Casualties from all brigades began to be evacuated to this MDS and thence to Imphal. These arrangements were maintained until the opening of the Imphal-Kohima road. A large number of battle casualties including sick were admitted to and treated in the divisional medical units during the months of May and June.

Medical Arrangements in the Corps Area

The bed cover available in Imphal underwent considerable alterations during the course of the operations. By the first week of April the bed strength was as follows:—

	I.T.	B.T.
87, 88, 89 CGHs (400 beds each)	900	300
41 IGH	400	200
79 IGH	600	
14 CCS	200	100
24 CCS	350	100
19 CCS	300	100
64 Indian Field Ambulance	200	
	<hr/> 2,950	<hr/> 800
Total	3,750	
Approximate strength of IV Corps	120,000	
Bed cover required at six per cent	10,440	
Bed cover available	<hr/> 3,760	
Deficit	<hr/> 6,680	

If the absorption rate was taken as 70 per thousand it would be seen that approximately 262 casualties a day could be admitted to the hospitals whereas the daily admission rate would be 720 leaving a deficit of 458 which had to be evacuated out of Imphal per day. In the event, however, owing to an increase in beds as well as the low sickness and wounded casualty rate these peak figures were hardly reached.

It was the decided policy of the Army that the minimum number of ancillary units capable of catering to the needs of the combatant units should be left in Imphal and that all useless mouths should be evacuated from the plain, thus easing the strain on the supply situation. Such of the medical units in the Imphal plain as had deficiencies in equipment and personnel were therefore flown out. In some cases where it was possible to amalgamate them with other units this was done. Whatever equipment was left was taken over by similar units remaining in Imphal. Towards the end of April, 14 BGH and 79 IGH which had lost part of their equipment were flown out complete with their remaining stores. Five MAS units grossly understaffed and deficient in vehicles were flown out, but the remaining vehicles were allotted to other sections earmarked to remain in Imphal.

In May sanction was granted to raise the bed cover to 7,000 in order to cope with the increased casualties both sick and wounded. The expansion in bed strength was to be as follows:—

41 IGH	1,000
19 CCS	1,000
24 CCS	1,000
14 CCS	1,000
87 IGH	600

88 IGH	..	600
89 IGH	..	600
ISSs	..	200
Field Ambulances	..	1,000
		<hr/> 7,000

It was decided to use stretchers and bamboo beds for the expansion and it was also necessary to reduce the space between beds to one foot. By the first week of June the scheme was completed. During May the remaining non-essential units detailed below were flown out of Imphal.

10 Anti-Malaria Unit.

36 and 51 ISSs.

45 and 46 Sub Dep Med Stores.

37, 44, 48 and 67 MASs.

In the first week of June two ISSs were combined to provide a Corps Convalescent Depot to hold 850 patients (Indian). These schemes of expansion increased the bed cover and consequently reduced the strain on air evacuation to some extent.

This layout remained in force until the conclusion of the operations. There were considerable shortages in the establishment of units both in officers as well as other rank during this period. With the onset of the monsoon considerable areas were flooded and work in hospitals was dislocated. Sanitary installations broke down and added to the difficulties. Patients had to be moved to other sectors and actually boats had to be used to go from place to place in the premises of 89 IGH. Even with all these serious difficulties work was never held up and morale was high. In the discharge of their innumerable tasks under extremely adverse circumstances the medical services added another chapter to their glorious record.

Evacuation

Evacuation from forward areas has been described in detail earlier when the medical cover for operations was discussed. Excepting for the bad terrain and indifferent communications in the forward areas evacuation in that sector presented no other difficulty. The Allies enjoyed virtual air supremacy over the battle area and, except for occasional shelling or mortaring the road evacuation was hardly hampered at any time.

The original plan of establishing forward hospital areas in Imphal and Kohima had to be materially altered when the Japanese offensive across the Chindwin River met with its initial success and resulted in the siege of Imphal and cutting of Imphal-Kohima Road. Hospitals in the forward areas had to be rapidly withdrawn leaving only the essential bed cover required, when the optimum air lift of casualties was established. In view of the difficulties of supply a minimum number of hospitals and CCSs were left in the plain, and later additional bed strength for these units was sanctioned to hold more casualties and relieve the strain on air evacuation and base hospitals. The hospitals withdrawn were

divided into two groups, one group being withdrawn to Agartala and Comilla where the aerodromes for the air supply of Imphal were sited. The other group was withdrawn to the Brahmaputra valley in north-east Assam to cover the operations in the Kohima sector which will be described later. Dacca remained as the base hospital centre. It would be remembered that the development of Dacca hospital centre commenced about the beginning of 1943. The selection of Dacca as hospital centre for operations against the Japanese on the eastern frontiers of India was more or less based on logistical considerations. Excellent accommodation for hospitals was available with a first rate airfield at a short distance. River and Rail communications to the south and north were adequate and road communications were good. These considerations led to the development of Dacca as a hospital centre even in spite of the fact that climatically the place was by no means ideal for a hospital base. Eventually 5,200 beds (I.T. and B.T.) were established in Dacca. Comilla also became an important local point in the operations against the Japanese. Its central position and its location on the Bengal-Assam Railway between Chittagong and Manipur Road and Dacca, its suitability for airfield construction and for signal communications centre were the tactical reasons influencing the decision to locate the HQ of the Fourteenth Army there. However hospitals originally located in Comilla envisaged cover only for the local garrison. The final decision to form hospital bases in Agartala and Comilla was therefore made purely because these were the bases for air supply of the besieged garrison at Imphal and transport aircraft returning with casualties could not be diverted. Engineer facilities were extremely short and hospital sites and roads had to be improved, and even this took considerable time to complete; and so only a portion of the casualties could be held at Comilla and Agartala and the rest had to be staged to Dacca. Thus owing to acute shortage of aircraft the ideal of concentrating all hospitals and bringing all casualties by air to Dacca could not be achieved, even though a squadron of Dakotas would have sufficed for the task, and what is more these planes also could have backloaded supplies to Imphal.

Air evacuation of casualties requiring urgent hospitalisation was in vogue ever before the siege of Imphal commenced but it was with the encirclement of Imphal that wholesale airlift of casualties began. Actually a total of 274 lying and 1,547 sitting cases were evacuated from Imphal by air before the Imphal-Kohima road was cut on 29 March. With the commencement of the siege large scale evacuation of casualties and movement of troops commenced. As mentioned earlier two divisions were flown from Arakan to Imphal. Base installations including hospitals with their essential stores and equipment were evacuated from Imphal by air. Lack of experience and absence of any established routine caused many initial difficulties. In the early days the tendency was to arrange for mass evacuations at irregular intervals which invariably caused chaos and congestion at the receiving end. Daily evacuation established later ensured a smooth flow of casualties. The next difficulty to overcome was the indiscriminate loading of aircraft resulting in gross overcrowding of Chittagong hospitals obstructing the regular evacuation of

long term cases to India. Slightly ill casualties were evacuated by air in order to make available empty beds in Imphal resulting in manpower wastage. Eventually casualties were evacuated only to Comilla with the overflow to Agartala when required. With the considerable increase in the numbers involved it became necessary to have a well defined evacuation and distribution policy. The main features of this were:—

- (i) The retention of all sick and wounded who could be expected to recover within a period of three weeks in forward hospitals and Malaria Forward Treatment Units.
- (ii) The rapid evacuation of all longer-term cases to Comilla, Agartala or Dacca where all patients who could be expected to recover within two months were to be retained.
- (iii) The rapid evacuation of all patients who would require longer hospitalisation than two months to the base hospitals in India.
- (iv) The early selection of certain special types of serious and urgent cases, such as gunshot wounds of the head, maxillofacial, penetrating eye wounds, etc., and their rapid selective evacuation to the respective specialist units.

In the event this last group of cases was to demonstrate more than others that air evacuation when efficiently organised and skilfully used was a life saving measure.

Air evacuation began in organised manner from the first week of April. Patients had to be transported to the airfield at Sapam, about 20 miles away from the hospital area in Imphal. The arrival of the planes did not conform to any definite schedule in the beginning. These factors caused considerable hardships to the patients as well as to the medical personnel. In one case as many as 400 patients had to travel to the aerodrome and back on three consecutive days before they could be finally evacuated. These defects were rectified later and by 1 May evacuation procedure was fully organised. However, it was not possible to move the hospitals nearer airstrips as these were outside the defended boxes and as many as six airstrips were being used. Sixty-four Indian Field Ambulance was detailed to be in charge of air evacuation. This unit provided the officers and stretcher bearers needed and supplied light refreshments to the patients at the airstrip. If there was a long delay at the airfield arrangements were made to give the patients a meal before the take off. It must however be noted that in this theatre no medical air evacuation organisation was established as such, as in the Middle East and Italy, even though in the latter instance no complete airlift of casualties was attempted at any time nor had the evacuation assumed the large proportion that it did at Imphal. With experience rapidity for loading also reached a high pitch. A commando plane carrying 12 lying and 30 sitting cases with their kit was being loaded in about 9 minutes. The medical authorities were entirely dependent on the respective operational branches for air evacuation, nor did they have any say in the routing of the planes, and any changes in the programme of flights had to be accepted even if it was inconvenient or caused confusion in the established arrangements. Information could not be sent to the hospitals at the receiving end as these were received late at the

despatching end, if received at all. These difficulties conclusively proved the necessity of having planes under control of the medical branch for air evacuation.

By the second week of May information was received that Comilla was to fade out of the picture as an air supply base. The main bases were now to be Agartala, Sylhet and Fenni to the south of Comilla, on the Rail road to Chittagong. This had to be accepted although unfortunate from the medical point of view, as hospitals had been grouped particularly at Comilla to meet the large scale evacuations which had hitherto been made to that place. One CCS along with one ISS and a medical store depot were moved to Fenni and evacuation to Comilla was arranged by rail. Owing to the heavy onrush of casualties, inevitable congestion in hospitals occurred during certain periods when the two months rule for evacuation to India had to be waived and even short term cases were evacuated. Hospitals in Imphal experienced considerable difficulty due to the retention of stretchers at the air supply bases and frequently had to meet acute shortage of stretchers by improvisation and other means. The matter was represented to HQ Fourteenth Army and the situation improved by the beginning of June, 1944.

The correct use of the facility of air evacuation was an important factor. It was seen from experience that evacuation at the wrong stage may be dangerous, for example, in Burns cases where secondary shock is liable to develop, or typhus patients after the fifth-day and before convalescence. The list of contra-indication for evacuation at the time included the following:—

- (i) Shock.
- (ii) Abdominal and thoracic wounds.
- (iii) Acute abdominal conditions.
- (iv) Recent severe haemorrhage, including haemoptysis and haematemesis.
- (v) Gas-gangrene.
- (iv) Chemically gassed.
- (vii) Pneumothorax.
- (viii) Pneumonia.
- (ix) Angina-pectoris.
- (x) Coronary occlusion during the first month.

The operations in Imphal conclusively established air evacuation as another instrument placed in the hands of the medical services with which to reduce mortality and morbidity and extend the availability of highly specialised medical treatment. To achieve this, however, it was essential that aircraft should be available on the request of the physician or surgeon-in-charge of the patients. Aircraft would be frequently required urgently and it is essential that at least a proportion of the aircraft allotted for casualty evacuation should be reserved primarily for that role alone.

Health of the troops

The health of the troops remained remarkably good during the major part of the period under review, and it was only towards the closing

stages of the operations that sickness rate began to mount to any appreciable degree. During April 1944, the sickness rate was 2·3 per thousand. The sickness rate thereafter registered a steady increase, and by the end of May the rate was 2·4 per thousand. In June there was a well defined deterioration in health, the rate by the middle of June being 3·58 per thousand and by the end of the same month the rate had reached the fairly high figure of 3·59 per thousand. But in view of the fact that by this time both monsoon and malaria season were fairly well advanced and that the troops were more or less continually engaged in very strenuous operations, with diminishing rations, these rates were considered to be fairly satisfactory. With the raising of the siege of Imphal and consequent improvement in the morale and liberal scale of rations, it was confidently anticipated that an improvement in the physical well being of the troops would occur.

Malaria: The incidence of malaria in the early weeks of the campaign was remarkably low. By the third week of April all troops operating in malarious areas were placed under mepacrine treatment and instructions were issued to ensure that all troops moving into such areas later were to be placed under suppressive treatment. Corps and sub-area-troops were located in the 'boxes' which were either in non-malarious areas or had an anti-malaria unit in the box to control malaria by temporary measures. Anti-malaria drainage of the affected areas of Imphal was also taken up. The pre-monsoon rains were very light, and during the whole of April the total rainfall was only 1·9 inches as against 3·5 inches in April, 1943. This low rainfall helped in keeping comparatively large areas free from malaria during the greater part of May. The anti-malarial drainage schemes started in April had however to be considerably curtailed as all labour employed on the work had to be evacuated out of Imphal in view of the supply difficulties and the consequent decision to keep only essential personnel in Imphal. This led to the schemes being drastically curtailed and limited essential work was to be continued with such labour as the anti-malarial units could provide. The short term measures for the control of malaria in some boxes, where anti-malaria units were available, met with only very limited success and it became necessary to place all troops in malarious areas under suppressive treatment. By the middle of May, it became necessary to fly out the anti-malaria units also as a food economy measure. Eight units were left with the Corps, one for each division and four with the Corps, which were moved to the malarious boxes. The incidence of malaria inclusive of NYD Fever in the various formations of the Corps for the last week of April was as follows:—

Formation	Actuals	Rate/1000/day
Corps	208	0·73
17th Ind Div (+1 brigade) ..	58	0·39
23rd Ind Div	25	0·17
20th Ind Div (—1 brigade) ..	101	0·84
5th Ind Div	37	0·61
254th Ind Tk Brigade	13	0·39
50th Ind Brigade	8	0·65

During the whole of May and the early part of June when the fighting was at its height the incidence of malaria remained very low. The AMUs continued to do all that was possible to keep malaria under check and justified their retention. Some Officers Commanding of these units were given limited advisory duties in the forward areas in order that specialists' advice may be available in such sectors. A pamphlet on anti-malaria instructions was issued by the Corps HQs in order to familiarise all ranks with details of anti-malaria duties and standardise the procedure in carrying out the unit's functions in this respect.

With the onset of the monsoon and the flooding of streams and nullahs, conditions became ideal for mosquito breeding; and by the last week of May a sharp rise in malaria casualties was noticed when the admission rate rose to 0.9 per thousand per day. The increase was mainly amongst the troops fighting in the foothills on the approaches to the Imphal plain, but the incidence of malaria in the Imphal keep did not show any significant increase. Suppressive treatment was the only effective anti-malaria measure that could be enforced in the former category of troops due to operational exigencies. Nets and sprayers were not often carried and anti-mosquito cream was of limited avail as the troops were exposed during the most dangerous part of the night. Light pattern of mosquito nets like the bush net was not available during this period. Due to tactical necessities it was also impossible to avoid occupation of local villages. It was not practicable for the anti-malaria units to assist these troops as they were usually unaware of the moves until they had actually taken place. The work of the mobile sections of these units was considerably hampered due to restrictions on the use of petrol.

The malarial rate rose to 1.2 per thousand per week in the first week of June, but again fell to 0.9 per thousand per week by 18 June. Up to 25 June, Imphal had 12.6 inches of rain of which 9.8 inches fell in the first week, and there was rapid increase in springs and seepages. Although the general rate was not high, fairly severe local epidemics occurred especially in 17th Indian Division. Two battalions of the division, namely the 2/5 Gurkhas and the 9th Border Regiment, were particularly affected. These battalions had carried out some fairly long range penetrations in the foothill areas south of Bishenpur under severe conditions. It was impossible to use mosquito nets during these operations. Owing to supply difficulties mepacrine was not received regularly especially by detached platoons and sections with the result that there was a breakdown in suppressive treatment. The rate of incidence of malaria in the 17th Indian Division for the week ending 24 June was 3.0 per thousand per day. It was decided to place all affected units under special mepacrine treatment viz., 0.3 gm. of mepacrine daily for five days. This had considerable effect and by 1 July the malarial rate in the division had declined to 1.7 per thousand per day.

By 1 July the Corps malarial rate had also decreased considerably. The terminations of the current phase of operations involving exposure to high infection risk, the tightening up of administration of suppressive

treatment, and the special treatment of formations mostly affected, all contributed to a return to the normal.

Dysentery and Diarrhoea

Next to malaria this disease group presented the highest admission rate to hospitals. By the beginning of May the average admission rate rose to 0.5 per thousand per day from 0.41 per thousand for the month of April. The evacuation policy at this time was to evacuate ex-Imphal all cases which were not likely to be fit for return to duty within a 'reasonable' time. By the end of May the rate had risen to .70 per thousand and by the middle of June the rate rose further to 0.9 per thousand. No definite cause could however be found for this considerable increase in the incidence but certain contributory circumstances were invariably present. The standard of sanitation prevailing in the forward areas left much to be desired. It must however be remembered that within the limitations imposed by the siege and consequent air supply all efforts were made to keep the sanitation standards as satisfactory as possible. Water supply was primitive especially in forward areas. Fly menace was considerable. Other possible contributory factors were (1) nervousness and (2) malnutrition. These two factors were negligible and no gross evidence of malnutrition was observed during the entire period of the operations.

The attached table shows an analysis of all cases of this group admitted to 41 IGH in Imphal during the month of May 1944. The figures are of interest and the following points were well illustrated:—

- (1) The high proportion of dysentery cases in the group. Of the 538 cases 399 were cases of dysentery.
- (2) The decrease in the number of dysentery cases namely the drop from 166 cases in the first ten days period to 96 in the last.
- (3) The high proportion of protozoal dysentery, i.e., 96 cases out of a total of 399 or 24 per cent.
- (4) The marked drop in the number of cases of protozoal dysentery, i.e., from 64 cases in the first ten days period to seven in the last. The average daily admission rate for this group for May and the first week of June 1944 and for the corresponding period of 1943 is given below.

Period		1943	1944
May— 1st Week	.. ..	0.27	0.53
2nd Week	.. ..	0.24	0.57
3rd Week	.. ..	0.34	0.70
4th Week	.. ..	0.45	0.81
June— 1st Week	.. ..	0.61	0.91

It will be seen from the above table that the curve of incidence for these two years has run a very similar course. From the third week of June there was a steady decrease in the incidence of this group of diseases.

The following Table shows the details of cases of Diarrhoea/ Dysentery admitted to 41 IGH(C) during May, 1944. All examinations were carried out at 23 Field Laboratory attached to the Hospital.

(A) Details of all cases of Diarrhoea and Dysentery admitted and investigated.

			1st-10th	11th-20th	21st-31st	Total
Officers	..	..	12	7	15	34
BORs	..	..	85	60	48	193
IORs	..	..	83	76	91	250
Non-Combatants	..	..	13	8	13	34
Labourers	..	..	18	4	5	27
Total	..		211	155	172	538

(B) Details of Cases diagnosed as Dysentery.

Dysentery	Protozoal	..	64	25	7	96
"	Bacillary	..	78	26	30	124
"	Bacillary Exu-					
	date	..	..	11	5	16
"	Clinical (indef					
	Exudate)	..	34	75	54	163
Total	..		166	137	96	399

(C) Details of Dysentery Cases by groups.

Officers	..	..	12	7	4	23
BORs	..	..	52	42	25	119
IORs*	..	..	102	88	67	257
Total	..		166	137	96	399

(D) Details of cases diagnosed as Dysentery Protozoal.

Officers	..	..	3	..	..	3
BORs	..	..	26	8	4	38
IORs*	..	..	35	17	3	55
Total	..		64	25	7	96

Venereal Diseases: There was a fairly high incidence of this disease during April and May. Two hundred and fifty cases were evacuated ex-Imphal in the course of thirty days, representing about five per cent of the total evacuations, resulting in considerable wastage of manpower. Vigorous measures were enforced to bring the incidence under check including propaganda by way of pamphlets and posters. In order to conserve manpower it was decided towards the end of May to reduce the evacuation of V.D. cases as far as possible. One hundred beds (70 Indian, 30 British) were set apart in 41 IGH for the treatment of V.D. cases. In suspected cases of Syphilis all investigations were to be done at the hospital and treatment commenced. The patient was to be

*This includes Non-Combatants and Labourers.

sent back to his unit when free from active signs of the disease, and treatment continued in the case of static unit by the RMO and in the case of forward troops by the RMO or in a field ambulance whichever was decided by the ADMS of the Division. Fresh cases of Gonorrhoea were to be admitted to any hospital or CCS and treated in the standard manner. Chronic cases of Gonorrhoea were to be sent to 41 IGH for specialist's opinion and treatment, if found necessary. The preventive measures enforced improved the situation considerably as would be seen from the fact that there were only eight cases of V.D. in the first fortnight of June 1944 as against 82 for the last fortnight of May 1944.

Other Diseases: Fourteen cases of Typhus occurred during this period, the occurrence being sporadic and widely distributed. Of these six cases occurred in the Bishenpur area and four in the Palel sector. The rest being distributed in the other sectors.

Malnutrition: The progressive cutting down of the scale of rations during the period of siege gave rise to considerable anxiety about large scale onset of the effects of malnutrition. Multi-vitamin tablets were issued early in May for all troops of the forward areas and the garrison. But despite all the forebodings and shortage of rations no gross effects of malnutrition were evident after the conclusion of the operations. A certain degree of malnutrition was present and was probably inevitable under the circumstances but close observation failed to show the same to be a major contributory cause for sickness.

Rations: With the commencement of the siege the supply of adequate and balanced rations to the troops on the Imphal plain became a very important problem. The supplies had to be brought in by air and the limited air lift was strained to the maximum. The quantity of fresh vegetables, etc., obtainable from local sources was very limited and later on dried up altogether. The stocks held sufficed for the time being, but by the beginning of May the quantity of potatoes and fresh vegetables in the scale of rations had to be reduced. Two and a half ozs of tinned milk was also being supplied; 22 ozs of rice or 16 ozs of Atta and 6 ozs of rice were issued to Indian troops, but it was evident from the supply position that these scales could not be long maintained. Meanwhile, as mentioned earlier, in order to maintain an optimum scale of ration it was decided to fly-out all troops in the plain who were not essentially required for the conduct of the operations.

By the middle of May a reduced scale of rations yielding approximately 3,500 calories was instituted. In view of the prevailing conditions and the period for which it was likely to be used the diet was considered to be satisfactory. There was considerable difficulty in providing fresh vegetables or meat, but troops actually engaged in operations were given preferential scale wherever possible. In order to conserve ration stocks all troops being evacuated ex-Imphal were placed on half rations. Multi-vitamin tablets were issued to troops on the scale of four tablets per man per week. By first of June the caloric value was further reduced by ten per cent. The approximate caloric value of the rations at this period was as follows:—

Indian troops—2994. British troops—2864.

This was acceptable only as an operational necessity and was obviously inadequate for fighting troops, especially during the malaria and monsoon season and the urgent need of increasing the scale of rations at the earliest possible opportunity was impressed upon the staff. The issue of vitamin tablets was increased to one per man per diem. No malnutrition was detected at the regular medical examinations. A further reduction had to be made owing to operational exigencies by the middle of June and the caloric value of the ration declined to 2750 calories per day. Its inadequacy was stressed but there could be no improvement for obvious reasons until the siege was lifted.

The Imphal-Kohima road was opened on 22nd June and the effect on ration situation was immediate. Scale rations were increased within a few days of the lifting of the siege and supply of fresh meat and vegetables was raised immediately. The full scale rations began to be issued early in July. The scale of rations at different periods during the operations is given below:—

IV CORPS RATION SCALES ON 15 JUNE 1944 BRITISH TROOPS

Serial	Commodity	Scale	Remarks
(A)	<i>Daily Issues</i>	ozs.	
1.	Bacon Tinned ..	1	
2.	Pork and Soya Links	2	When not available 1 oz Bacon Tinned to be issued in lieu.
3.	Beans/Tinned/Dried ..	1	
4.	Bread	14	(a) Biscuits to be issued in lieu once weekly at the scale of 9 ozs. (b) Flour issued in lieu provided due notice was given, at the scale of 10 ozs.
5.	Curry/Baking Powder	1/30	When Curry Powder was not available condiment powder could be drawn in lieu at the same scale.
6.	Fruit Tinned	2	(a) Fruit Dried could be issued in lieu at the scale of 3 ozs. (b) Until stocks were exhausted Almonds and Raisins to be issued in lieu once weekly at the scale of 3 ozs.
7.	Fish Tinned	6/7	Sardines to be issued in lieu at the scale of 3/7 oz.
8.	Jam Marmalade Honey Golden Syrup	OR } OR } OR } 3/4	When not available 1 oz Fruit Dried to be issued in lieu.
9.	Butter Margarine Cheese	OR } OR } 1	(a) To be issued as available. (b) Dripping as available to be issued in lieu at the scale of 1 oz to those troops who so desired.

Serial	Commodity	Scale	Remarks
10.	Meat Tinned	.. ozs. 6.	(a) Meat Fresh at the scale of 7 ozs, plus Meat Tinned at the scale of $1\frac{1}{2}$ ozs to be issued in lieu <i>as available</i> . (b) Divisions, Corps, Troops attached to Divisions and RAF personnel, <i>all actively engaged in operations</i> were entitled to the following in lieu of Meat Tinned. (i) Steak and Kidney—twice weekly at the scale of 5 ozs. (ii) M and V—once weekly at the scale of $13\frac{1}{3}$ ozs. When M and V was issued Vegetable Tinned to be issued at half scale, i e., at 2 ozs.
11.	Milk Tinned	.. $2\frac{1}{2}$	Milk Powdered to be issued in lieu at the scale of $2\frac{1}{3}$ oz.
12.	Mustard ..	.. 1/100	
13.	Oatmeal ..	.. $\frac{3}{4}$	
14.	Oil Cooking ..	.. $\frac{3}{4}$	
15.	Pepper ..	.. 1/100	
16.	Rice ..	.. $\frac{1}{2}$	
17.	Salt ..	.. 1	
18.	Sugar ..	.. $3\frac{1}{4}$	
19.	Tea ..	.. $\frac{5}{8}$	
20.	Vegetables Tinned	.. 4	(a) Vegetable Dehydrated or Onions Dehydrated or Potatoes Dehydrated to be issued in lieu at the scales of 1 oz, $1\frac{1}{3}$ ozs and 2 ozs respectively. (b) <i>In addition</i> Vegetable Fresh and Potatoes Fresh to be issued to the maximum availability.
21.	Firewood..	.. Lbs. 3	
(B)	Weekly Issues		
22.	Cigarettes	.. Nos. 50	Tobacco as available to be issued in lieu on demand at the scale of 2 ozs.
23.	Matches ..	.. Boxes 2	Non-smokers—I box only.
24.	Paper Toilet	.. Sheets 35	
25.	Multi-Vitamin Tablets	Nos. 7	

NOTE: 1. *Aircrew Meal Rations* were issued in accordance with the Fourteenth Army Order No. 133 of 1944, provided the scale of issue did not exceed the scale stated above.

2. *Charcoal* issued as laid down in C.R.O. No. 295 of 1944.

INDIAN TROOPS

Serial	Commodity	Scale	Remarks
(A)	<i>Daily Issues</i>	ozs	
1.	Atta and ..	16	(a) Until stocks exhausted Bajra
	Rice ..	6	Flour and Maize Flour issued to all Atta Eaters at the scale of 2 ozs in lieu of 2 ozs Atta.
	Or		
	Rice	22	(b) Until stocks exhausted Groundnuts issued to all Rice Eaters at the scale of 2 ozs in lieu of 2 ozs Rice.
2.	Dal (Split or Whole)	3½	
3.	Ghee (Milk or Vegetable)	1⅔	Cocoanut oil, Groundnut oil and Mustard oil might be demanded in lieu at the same scale by those troops who so desired.
4.	Milk Tinned ..	2½	Milk Powder issued in lieu at the scale of 2/3 oz.
5.	Vegetables Tinned ..	1	(a) Vegetables Dehydrated or Onions Dehydrated or Potatoes Dehydrated issued in lieu at the scales ¼ oz, 1/3 oz and ½ oz respectively according to availability. (b) <i>In addition</i> Vegetable Fresh and Potatoes Fresh issued to the maximum availability.
6.	Sugar	2½	
7.	Salt	1	
8.	Tea	1/3	
9.	Condiment Powder ..	4/7	Until stocks exhausted Chillies, Turmeric, Ginger and Tamarind might be demanded in lieu of any portion of Condiment Powder at the same scale.
10.	Fruit Tinned ..	1	(a) Fruit Dried might be issued in lieu at the scale of 1½ ozs. (b) Until stocks exhausted Almonds and Raisins to be issued in lieu once weekly at the scale of 1½ ozs.
11.	Fish Tinned ..	1	(a) Sardines might be issued in lieu at the scale of ½ oz. (b) Goat-meat Dehydrated (Halal) might be demanded in lieu at the scale of 1 oz for those troops who so desired.

Serial	Commodity	Scale	Remarks
12.	Firewood	.. Lbs. 2	
(B)	<i>Weekly Issues</i>		
13.	Cigarettes	.. Nos. 40	Until stocks exhausted 15 Bidis to be issued in lieu of 10 Cigarettes.
14.	Matches	.. Boxes 2	Non-smokers—1 box only.
15.	Mutton Tinned	.. Ozs 2	To be issued only to FORMA- TION troops willing to accept.
16.	Multi-Vitamin Tablets	Nos. 7	

Note: Charcoal to be issued as laid down in C.R.O. No. 299 of 1944.

RATION SCALE OF IV CORPS AS ON 15 APRIL, 1944

1. *Scale of issue to British Troops*

(A) Daily Issues	Bacon Td	..	1 oz
	P and Soya Links	..	2 "
	Beans Dd/Td	..	1 "
	Bread (i)	..	14 "
	Curry Powder	..	1/30 "
	Fruit Td (ii)	..	2 "
	Fish Td	..	6/7 "
	Jam (iii)	..	2 "
	Margarine	} (iv)	1 "
	Butter		
	Meat Td.	..	6 "
	Milk Td	..	1 1/2 "
	Mustard	..	1/100 "
	Oatmeal	..	3/4 "
	Oil Cooking	..	3/4 "
	Pepper	..	1/100 "
	Rice	..	1 1/2 "
	Salt	..	8 "
	Sugar	..	3 1/2 "
	Tea	..	5/8 "
	Veg Td (v)	..	4 "
(B) Weekly Issues	Cigarettes BT	..	50 Nos.
	Matches	..	2 Boxes
	Paper Toilet	..	35 Sheets

2. *Scale of issue to Indian Troops*

(A) Daily Issues	Atta	} ..	..	18 ozs
	Rice			
	Dal	..	..	3 1/2 "
	Ghee	..	..	1 1/2 "
	Milk Td	..	..	2 1/2 "
	Veg Td (v)	..	..	1 "
	Sugar	..	..	2 1/2 "

		oz
	Salt	$\frac{3}{4}$ "
	Tea	$\frac{1}{2}$ "
	Condiment Powder	4/7 "
	Fruit Td (ii) ..	1 "
	Fish Td (vi) ..	1 "
(B) Weekly Issues	Cigarettes IT ..	40 Nos
	Matches ..	2 Boxes

3. *Scale of Issue to Animals*

Grain and Fodder— $\frac{3}{4}$ normal FS Scales.

- NOTES:** (i) Occasional issues of Biscuits at the scale of 9 ozs to be made for turnover purposes.
- (ii) Until exhausted, stocks of Fruit Dd to be issued as a supplement at the scale of 4/7 oz to BT and IT.
- (iii) To give maximum variety, Honey, Golden Syrup, and Marmalade issued as far as stocks permitted.
- (iv) Existing stocks of Cheese issued as a substitute for Butter or Margarine at the scale of 1 oz.
- (v) Fresh Vegetable and Potatoes to be issued to their maximum availability in order to compensate for the deletion of Onions Fresh and Potatoes Fresh from the above ration scales.
- (vi) As a substitute for Meat IT.

Medical Stores: Adequate medical stores were available in the plain before the siege commenced and subsequent build up was also satisfactory and no anxiety was therefore felt in this respect. Such of the stores left behind by medical units on departure were also used to increase the reserves. Two sub-depots were flown out and 17 Indian Depot Medical Stores in Imphal served as the base depot during the operations. The return of stretchers used for evacuating patients presented a major problem which was however understandable as the planes flying in were loaded to the maximum capacity with supplies essential for the conduct of the operations. This again showed the necessity, at least in operations of this nature, to have separate ambulance planes under the control of the medical authorities. During the first fortnight of May stretcher wastage reached the high figure of 820. Various methods were tried to evolve a system for the prompt return of stretchers and even though these measures improved, the return wastage was never brought completely under control during this period.

10 JUN 1965

DETAILED MAP OF KOHIMA TOWN

SCALE OF YARDS

400 0 400 800 1200 1600 2000

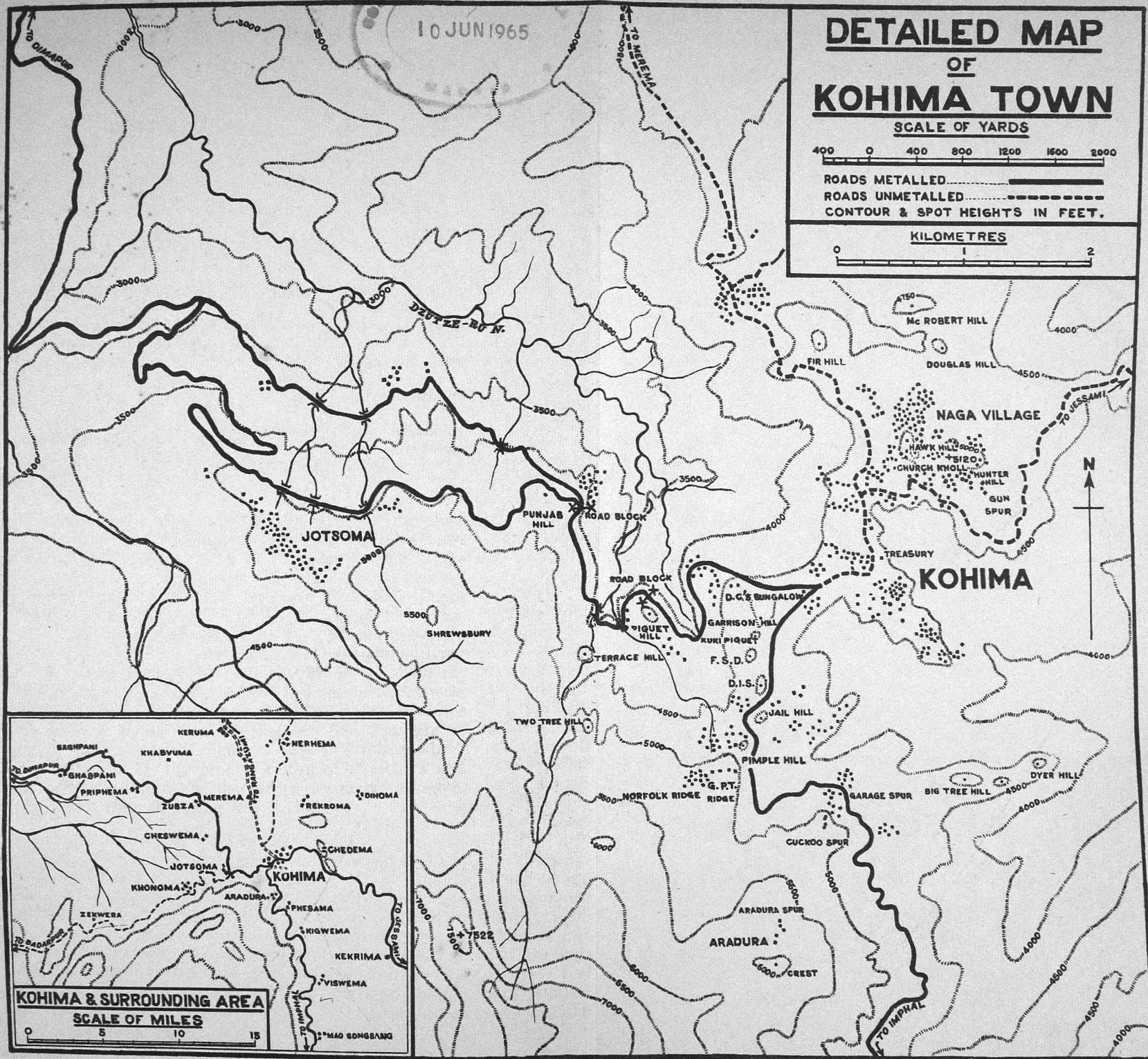
ROADS METALLED

ROADS UNMETALLED

CONTOUR & SPOT HEIGHTS IN FEET.

KILOMETRES

0 1 2



KOHIMA & SURROUNDING AREA
SCALE OF MILES

0 5 10 15

CHAPTER XXII

The Siege and Battle of Kohima

It has been mentioned earlier that the Japanese in their advance across the river Chindwin towards India directed their forces in three main directions. The southern column was to cut off the 17th Indian Division occupying Tiddim, the central column was to encircle Imphal by a two pronged advance from the direction of Ukhrul and Pael, whilst the northern column was to cut the main supply route from Dimapur-Imphal and capture Kohima with the ultimate object of seizing the main supply base at the railhead Manipur Road, cut the supply lines to North Assam and China, and eventually to advance into Bengal. The fate of the offensives in the southern and central sectors has been described in detail earlier. The offensive on the northern sector also resulted in very heavy fighting but ultimately ended in the complete defeat of the invaders.

On 15 March the 31st Japanese Division crossed the river Chindwin on a 40-mile front and commenced advance towards Kohima and by 27 March had reached Kharasom, about 28 miles south-east of Kohima. On the following morning the Japanese attacked the position held by the 1st Assam Regiment in the Jessami sector. In spite of their determined resistance the troops holding these forward positions were forced back and ultimately withdrew to Kohima.

The Japanese offensive had barely got under way before efficient counter-measures were initiated to stem the advance. With the road cut to the north of Imphal, and Kohima closely threatened, it was evident that the IV Corps in Imphal would not be able to control the operations in the northern sector. The immediate necessity of reinforcing the Kohima sector was evident. On 21 March, HQ XXXIII Corps and the 2nd British Division, then undergoing training in the Bombay-Poona area, were ordered to move forthwith to Dimapur. The HQs of the Corps was established in Jorhat on 6 April. Meanwhile the 161st Indian Infantry Brigade of the 5th Indian Division reached Dimapur by air and completed its concentration by 26 March. The 5th British Infantry Brigade (2nd British Division) was the next to arrive closely followed by the 4th and 6th British Infantry Brigades and the 33rd Indian Infantry Brigade (7th Indian Division) from Arakan. The 23rd British Brigade of specially trained jungle assault troops was moved to Jorhat. All these troops were placed under command of the XXXIII Corps. Further reinforcements kept arriving in this sector. By the end of May, HQ 7th Indian Division, the 114th Indian Infantry Brigade and 268th Indian Lorried Brigade had arrived there. HQ 7th Indian Division then assumed command of the 33rd, 114th and 161st Indian Infantry Brigades. The XXXIII Corps had seven brigades under the command of the 2nd British and 7th Indian Division in addition to the 23rd British Brigade and other miscellaneous formations.

The Siege of Kohima

The situation at the end of March 1944 was that the 161st Indian Infantry Brigade (5th Indian Division) had arrived from Arakan and was placed under command of 202 Line of Communication Area for the defence of Kohima. It was deployed with one of its battalions (4th Royal West Kents) in Kohima and two others in contact with the Japanese forces to the west of Jessami. But it was evident that with the forces available it would not be possible to hold both Dimapur and Kohima and at any rate the Japanese forces could easily bypass the widely spread units of the 161st Indian Infantry Brigade. It was essential to retain Dimapur as its loss would mean the cutting off of the Assam Railway and difficulty in the employment of the XXXIII Corps. The 161st Indian Infantry Brigade was accordingly ordered to move back on 29 March to the Nichuguard defile south of Dimapur. The retention of Kohima though desirable was not vital and had perforce to be left to the skeleton garrison only, composed of the 1st Assam Regt., the Shere Regt., local levies, men from administrative units and convalescent camps. The main aspects of the plan of the XXXIII Corps at this time were (a) to secure the Nichuguard defile initially with the 161st Indian Infantry Brigade which was also to provide mobile columns to operate against the Japanese forces that might attempt to encircle the defile, (b) when the 5th British Brigade (2nd British Division) arrived to reinforce the Kohima garrison, to use the 161st Indian Infantry Brigade for the defence of Dimapur, (c) unless the Japanese penetrated Dimapur by the time the 2nd British Division had arrived, to leave the 33rd Indian Infantry Brigade, which had already had a good deal of fighting in Arakan, to hold Dimapur and to direct the 2nd British Division on Kohima and thence on to Imphal astride the main road.

On 5 April, two battalions of the 5th British Brigade arrived and the 161st Indian Infantry Brigade was ordered to send one battalion (the 4th Royal West Kents) to Kohima on 6 April, but it was too late to prevent the Japanese from occupying the greater part of the town and the Naga village to the north. On 6 April, the 161st Indian Infantry Brigade itself was instructed to join the Kohima garrison but was unable to do so as the Japanese forces were already astride the Dimapur-Kohima Road. The brigade formed a defensive box at MS 42½ on the Dimapur-Kohima Road (Jotsoma). On 7 April the Japanese forces gained possession of the main water supply in Kohima and the garrison thereafter had to be supplied by air drops. Meanwhile the garrison hurriedly occupied important features in Kohima itself. The 4th Royal West Kents occupied Garrison Hill and Hospital Hill and the 1st Burmese Regt occupied the Picquet Hill. On 8 April a strong Japanese detachment launched an attack on the positions of the 4th Royal West Kents and heavy fighting ensued but the position was held despite heavy casualties.

The Japanese forces had by this time bye-passed both the Kohima garrison and the 161st Indian Infantry Brigade holding the Jotsoma area and established a road block at MS 32 Dimapur-Kohima Road. On 9 April it was decided to place HQ 2nd British Division in command of all operations, forward of Dimapur, with the intention of opening up the

Kohima-Dimapur Road and clearing Kohima before the monsoon. The 202 L of C Area was to be responsible for protection of the railway and was allotted troops from 23rd British Infantry Brigade for this purpose. The HQ of the area was moved to Jorhat. These decisions were implemented after 10 April by which time advanced elements of the 4th and 6th British Infantry Brigades had begun to arrive. The 6th British Infantry Brigade was placed to cover Dimapur and Nichuguard defile. The 5th British Infantry Brigade began the advance to clear the road block whilst troops of the 4th British Infantry Brigade were used as they arrived for the protection of the line of communication of the 5th British Infantry Brigade. After some heavy fighting the road block at MS 32 was cleared on 12 April, but the Japanese forces had meanwhile established another at MS 38. On the same day a heavy attack was launched on the latter position as well and, during the following three days, Japanese positions between MS 38 and 39 were also eliminated. The advance continued against slight resistance and on 15 April the 5th British Infantry Brigade established contact with the 161st Indian Infantry Brigade in the MS 40 area. The road was now open to Jotsoma and persistent Japanese efforts to cut the road again were foiled. The 6th British Infantry Brigade was ordered to move to Jotsoma to relieve the 161st Indian Infantry Brigade in order to enable the latter to advance and gain contact with the Kohima garrison. The operations commenced on 16 April and the Japanese positions covering the approaches to Kohima were reduced systematically. On 18 April contact was first established with the garrison. The flank of Picquet Hill was secured and Hospital Ridge was occupied. On 20 April the road to Picquet Hill itself was opened and relief of the garrison which had been besieged for 13 days commenced.

Operations in Kohima

Since 6 April the Japanese forces had been trying to liquidate the garrison at Kohima, but their failure to do so during the course of a fortnight, despite their superiority in numbers and possession of important tactical positions, only brought to relief the determination and tenacity of the small garrison that defended the town. The garrison consisted of approximately 2,000 personnel of made-up detachments of the Burma Rifles and Assam Regt, the 4th Royal West Kents, 4/7 Rajputs (2 platoons), Shere Regt (2 Coys) Nepal, RIASC and Sappers and Miners. The principal points occupied by the garrison were the Summer House Hill, DC's Bungalow, Picquet Hill and FSD.

On the night of 6/7 April the Japanese forces had infiltrated in the DIS area and were thrown back after a spirited counter-attack in which they sustained heavy casualties. With the town practically surrounded the supplies had to be brought in by air and dropped by means of parachute. On 7 April, troops of the Assam Regt withdrew from their positions in the hospital area and took up positions in the Summer Hill area. During this move they came in for some heavy fire and suffered many casualties. Japanese forces occupied a ridge opposite the hospital area and covered the water point. On 9 April the Japanese launched an attack on the DC's bungalow and penetrated

up to the bungalow, but the position was again held in spite of heavy shelling. By the following day the fighting had become desperate and severe, and in view of the mounting temper of the Japanese offensive it was found that the DIS area was no longer tenable and the position was evacuated after nightfall.

Fighting died down for the next three days except for isolated attacks but again flared up on 13 April. Heavy shelling and mortaring commenced on this day, but this was not followed up by any infantry attack. The air dropping of water and ammunition was only partially successful as many parachutes fell in the Japanese held areas. A new source of water supply was discovered on the main road but the route to this area was exposed and hence water could be only drawn at night. However this relieved the distress of lack of water for the garrison. On the night of 13/14 April, a detachment of the 4th Royal West Kents moved to the DIS area to check the Japanese infiltration. By 15 April the garrison was in dire straits. The Japanese had occupied positions on the slopes above the town and the beleaguered garrison was being heavily shelled. The number of wounded was mounting with no hopes of immediate evacuation and rewounding was not uncommon. But still they fought back with courage and determination so that the Japanese were averse to taking any liberties. By 15 April the perimeter had shrunk considerably and the fighting mounted in ferocity but the garrison held on in the hope of imminent relief aided by supplies dropped by parachutes. On 17 April the Japanese pressure had considerably increased in the area of the DC's bungalow and FSD area. The attacks in the former area were repulsed but in the latter area the 4th Royal West Kents, who were continuously exposed to heavy shelling, were completely exhausted and had to be relieved. The Japanese did not relax the pressure and persistent attacks on the Picquet Hill, DC's bungalow and FSD continued throughout the night of 17/18 April. The defenders were by this time in no condition to offer any serious resistance and both the FSD and Picquet Hill fell to the Japanese by the morning of 18 April. It appeared that further resistance could not be maintained but the same day the road to Dimapur was opened and relief of the garrison commenced and wounded were evacuated. During these days of siege the garrison had little or no sleep and men were utterly exhausted. They would have been unable to continue the fight any longer even if supply dropping was maintained. But if the garrison had surrendered the subsequent operations would undoubtedly have been harder and more costly.

As related earlier the 161st Indian Infantry Brigade (less one Regt) which had been in Jotsoma, about four miles from Kohima, linked up with the 2nd British Division on 15 April and by 18 April it was ready to break the siege. At 0830 hours on 18 April the 161st Indian Infantry Brigade commenced the attack to relieve the garrison. After very heavy shelling troops of the 1/I Punjab Regt advanced and gained contact with the garrison. The wounded and the semi-combatant troops in the garrison were evacuated to the rear. The 4th Royal West Kents who could hardly muster about 250 men were also relieved from their positions.

A strange sight greeted the liberating troops as they marched into Kohima. The little town was completely destroyed and most of the houses were merely heaps of rubble. The trees were bare without any foliage but festooned with parachutes used for supply dropping.

With the relief of Kohima the first phase in the operations of XXXIII Corps was completed. The stage was now set for the battle of Kohima the object being to clear the Japanese from the entire area.

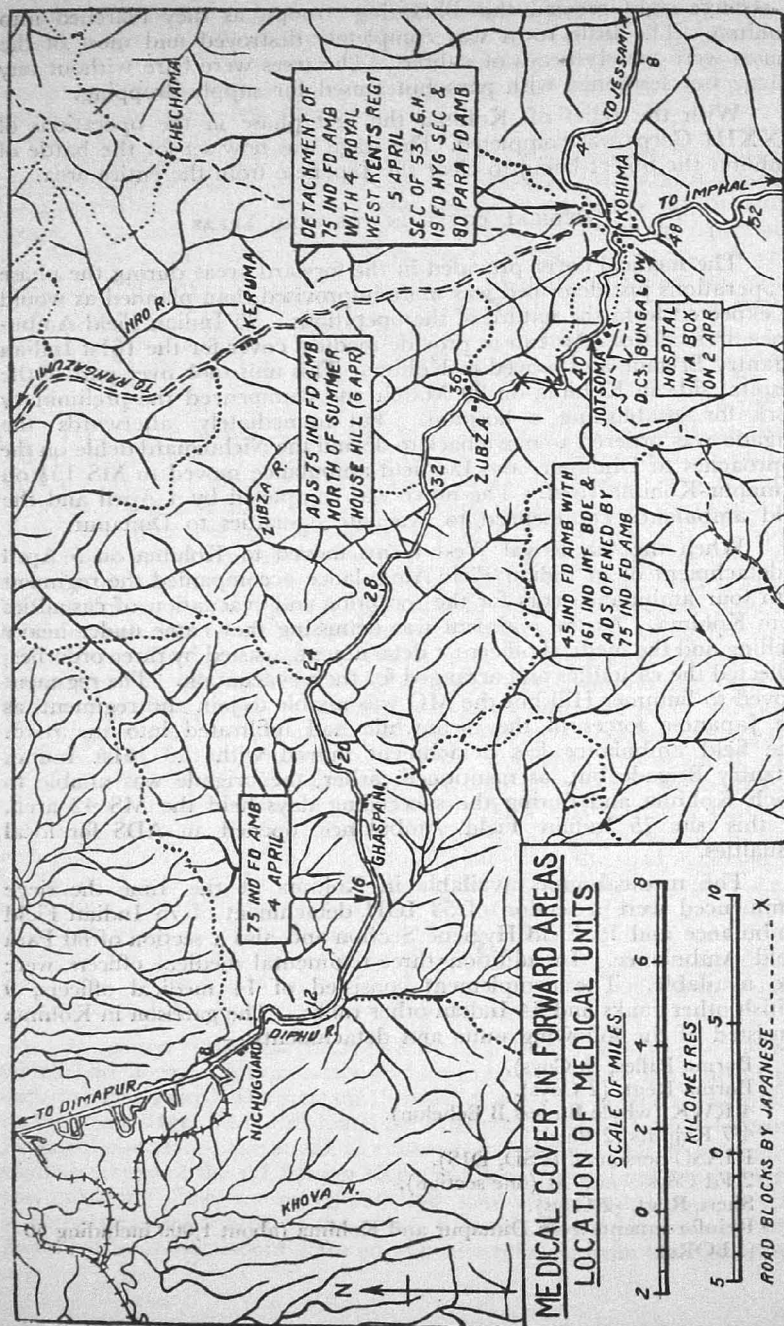
MEDICAL COVER IN FORWARD AREAS

The medical cover provided in the forward areas during the phase of operations just described was more improvised than planned as would be expected from the nature of the operations. 75 Indian Field Ambulance arrived from Arakan to provide medical cover for the 161st Indian Infantry Brigade and moved to Kohima. This unit took over part of the hospital side in Kohima on 29 March and commenced the preliminary work for establishing a hospital. But immediately afterwards the brigade was ordered to move back to defend the Nichuguard defile on the approaches to Dimapur, and the field ambulance moved to MS 15½ on Dimapur-Kohima road. The move was completed by 4 April and the field ambulance commenced to evacuate casualties to Dimapur.

When the 4th Royal West Kents moved to Kohima on 5 April a detachment of 75 Indian Field Ambulance accompanied the regiment with four ambulance cars for the reception and evacuation of casualties from Kohima. As the regiment was debussing they came under heavy shelling and the medical officer i/c detachment, assisted by three orderlies, collected the casualties and arranged for their evacuation. The regiment moved to Summer Hill but the MO was unable to join the regiment as the Japanese forces in the meanwhile had infiltrated into the road. The field ambulance less detachment moved with the 161st Indian Infantry Brigade but, as mentioned earlier, the brigade was unable to reach Kohima and during the succeeding days held the MS 42 area. At this site 75 Indian Field Ambulance opened an ADS for local casualties.

The medical units available in Kohima at the time the siege commenced were a section of 53 IGH detachment of 75 Indian Field Ambulance and 19 Field Hygiene Section and also a section of 80 Para Field Ambulance. In addition three regimental medical officers were also available. The complement consisted of 14 medical officers, 9 British other ranks and 64 Indian other ranks. The garrison in Kohima consisted of the following units and detachments:—

- Burma Rifles, (3 Coys).
- Burma Regt, (2 Coys).
- 4 RWK (whole Bn less B Echelon).
- 4/7 Rajputs (2 Plns).
- RIASC personnel (FSD, DIS).
- 2 Fd Coys S and M (one section).
- Shere Regt, (2 Coys).
- Reinforcements from Dimapur and Kohima (about 1,000 including 50 BORs).

**MEDICAL COVER IN FORWARD AREAS****LOCATION OF MEDICAL UNITS**

SCALE OF MILES



KILOMETRES



ROAD BLOCKS BY JAPANESE

At the commencement of the siege the medical situation was far from satisfactory. The whole area held had inadequate entrenchments and was exposed to heavy mortar and small arms fire. RAPs were established early in the siege but no centralisation of casualties was possible until the situation had become clear, and purely regimental system of evacuation existed. No resuscitation of casualties had been organised nor was the equipment available. To add to an already difficult situation the site occupied by the hospital detachment came in for a great deal of attention from the Japanese and alternative accommodation had to be found. On 2 April the hospital was established in a 'Box' near the DC's bungalow.

On 6 April OC 75 Indian Field Ambulance moved to Kohima and took charge as the SMO of the garrison. In view of the confined area held by the garrison and the shortage of medical officers it was decided to form an ADS just to the north of Summer Hill with all the available medical personnel and to centralise evacuation to this area. A resuscitation centre was also organised. Casualties were to be held in this ADS and the hospital. On 6 April the ADS commenced functioning. RAPs which were closed down earlier owing to lack of stores were again established with various detachments. The ADS personnel were organised as follows:—

- (a) Nursing group and followers.
- (b) Amb Sepoys Group for evacuation to ADS.
- (c) Entrenching and supply group.

Some medical equipment and stores were salvaged from the former site of the 53 IGH and carried over to the ADS. During the night of 6/7 April the Japanese gained possession of the main source of water supply, but a new source was discovered just outside the perimeter from where it was possible to obtain a limited quantity of water at night. Water was therefore rationed to one pint per head per day.

By 9 April the medical arrangements were working smoothly. A new group was organised in the ADS, termed the resuscitation and immediate treatment group, for carrying out the duties implied by that term. About 200 casualties had collected at the ADS by the date and it was evident that immediate steps should be taken to effect their evacuation so that the ADS could cope with the ever mounting inflow of casualties. Orders had been received for the detachment of 4/7 Rajputs to be withdrawn from the garrison to rejoin their parent unit and permission was secured to evacuate the walking wounded and the sick with this detachment. The route was rather complicated and hard and only 98 casualties were selected for this hazardous evacuation. The evacuation was to commence at 2030 hrs on 9 April. Three control points were established, one at the ADS, one intermediate post at 53 IGH and the last one (forward control) at the entrance to the nullah to the north-west of the latter through which the casualties were to proceed to a rendezvous at MS 42 where a patrol from the brigade was to meet the withdrawing group. The route down to the nullah was reconnoitred by troops of the detachment before evacuation commenced, and was reported clear.

All casualties were examined again immediately before evacuation to ensure that they were sufficiently fit to proceed. By 2045 hours the first batch of twenty casualties was clear of the intermediate post. The evacuation proceeded smoothly though slowly in three batches and by 2230 hours the last batch had reached the nullah. By midnight information was received from the brigade that the casualties had arrived at MS 42 safely and were accommodated at the ADS 75 Indian Field Ambulance in the brigade area pending evacuation to Dimapur. After the evacuation, the ADS was left with 104 lying cases 32 of which were serious. However casualties from the perimeter trenches were now evacuated to the ADS and all forward areas and RAPs were clear of casualties by the morning of 10 April.

On 10 April the Japanese established road blocks at MS 38½ and 39½ effectively, bypassing the 161st Indian Infantry Brigade. The same day an attack was launched on the DIS. The ADS was also shelled and mortared by the Japanese. Evacuation from the forward areas to the ADS became extremely difficult due to Japanese pressure, and it was decided to evacuate the DIS area, and withdraw the troops of the 4th Royal West Kents holding the position to FSD during the night of 10 April. The casualties were to be evacuated before the troops withdrew. These moves were carried out uneventfully. Meanwhile the ADS was filling up again and the shelling of the DIS area resulted in a high proportion of rewounding. Heavy shelling on 13 April resulted in 21 deaths and rewounding of 30 casualties. Two medical officers were killed and another wounded. Nursing became difficult and feeding arrangements were quite unsatisfactory. Indian patients were fed from the ADS kitchen and arrangements were made to get the food for British patients from the kitchen of one of the companies of the 4th Royal West Kents.

On the evening of 13 April, the ADS was heavily shelled again and the area in which the patients were held received about thirty hits. One medical officer and two orderlies were killed and many others were wounded. It had now become evident that the ADS site was far too exposed to the Japanese positions and decision was taken to construct a shell-proof accommodation for the casualties. Portion of the adjoining area where the Shere Regt had constructed good entrenchments was taken over and work was immediately taken in hand to construct splinter-proof dugouts for patients. This was completed on 14 April and the ADS shifted to its new site. Shelling and mortaring continued and even though the splinter-proof dugout received a direct hit no damage was done. The long hours of work and heavy shelling proved exhausting to the medical personnel. With the exception of the personnel engaged in evacuating casualties from the perimeter, the staff of the ADS was almost working round the clock attending to casualties and treating them whenever there was a lull in the fighting. The medical stores were rapidly dwindling and request was made for the air drop of certain essential items, like gas-gangrene, serum, morphia, etc. The stores were dropped on 15 March but it fell on a tree on the edge of the perimeter and became suspended on a branch. The Japanese tried to destroy it by

rifle fire but it was eventually recovered after a considerable difficulty. Morphia was kept buried in the ground to avoid loss by shell fire.

The perimeter was shrinking fast and the water situation became serious as it could be collected only at night with considerable difficulty. Air dropping of water commenced on 15 April and water discipline was tightened. Even inside the small perimeter it was becoming increasingly difficult to evacuate casualties from the trenches to the ADS. On the whole it was beginning to appear that these heroic labours were in vain when on 18 April forward troops of the 161st Indian Infantry Brigade linked up with the garrison. This link up should not be mistaken as the final lifting of the siege as the Japanese were still holding the commanding positions, but it now became possible to relieve the hard pressed troops of the garrison and evacuate the casualties that had accumulated at the ADS. This was decided to be carried out during the daytime on 18 April. No covered route could be had and the casualties were to be evacuated along the direct track through the old hospital site which was under observation of the Japanese posts. The fire from these positions was to be neutralised, as far as possible, during the evacuation which was to be along the track down the open spur leading from the Summer House Hill through the IGH site to the main road. From there the casualties were to be evacuated by motor ambulances to ADS 75 Indian Field Ambulance in the brigade area.

As in the previous evacuation, three control posts were established, one at the ADS, an intermediate post in the IGH area and a forward post at the roadhead, all linked by wireless. At the forward post a detachment from the ADS was established to arrange for loading the ambulances and to see that the wounded and sick were comfortable. All casualties were to pass through a gate in the Burma Rifles area of the perimeter where one NCO and six men established a control post. The lying cases were to be evacuated by hand carriage. 600 IORs were provided by the garrison for stretcher bearer duties. The walking cases were to proceed in batches of twenty-five with five minutes interval between each batch. They were to be followed by the stretcher cases which were divided into five groups, six men to a stretcher. Each group was to be controlled by an officer. The evacuation commenced at 0740 hours and proceeded smoothly without any interference by the Japanese. However between 1200 hours and 1400 hours there was some desultory shelling of the IGH area, but this did not seriously impede the evacuation schedule. However one officer and three other ranks were wounded and evacuation was temporarily held up during the periods of shelling. By 1640 hours all the casualties had been evacuated out of Kohima. The heroic work accomplished by the small group of medical personnel was a source of inspiration to all. Almost impossible tasks were accomplished both in the treatment and evacuation of casualties. In extremely adverse conditions life-saving surgery was carried out during the siege. Though there were no nursing facilities in the accepted sense of the word, this band of medical personnel continued to nurse and treat their cases often under heavy shell fire with zealous devotion. The behaviour of the wounded was also exemplary, despite the fact that during the period of

the siege they lay in open trenches under shell fire and a good proportion of them were rewounded.

MEDICAL COVER IN THE CORPS AREA

The medical services of the XXXIII Indian Corps upon arrival in Assam were confronted with grave difficulties. Previous to the Japanese advance, Kohima and Dimapur had been hospital centres on the route of evacuation from Imphal, and had held considerable number of casualties in order to reduce evacuation requirements from Assam to East Bengal and thence to India. At Kigwema there was one 1,000 bedded IGH and at Kohima there were two CGHs, one of 700 beds and the other of 1,000 beds. In addition, in Kohima there were two convalescent depots. At Dimapur there were 66 CGH and 59 IGH and sections of another hospital with, of course, all the ancillary elements necessary for a hospital base. The threat to Kohima caused an immediate withdrawal of all the forward hospitals in the Kohima-Kigwema area except for a section of 53 IGH(C) which was retained in Kohima. 66 CGH and a detachment of 59 IGH continued to function at Dimapur. Also 45 CGH which was located at Jorhat and 52 IGH located at Gauhati, were full to overflowing with either evacuated cases or local sick.

The arrival in this sector of the 2nd British Division, the 161st Indian Infantry Brigade (5th Indian Division), the 33rd Indian Infantry Brigade (7th Ind Div) and the 23rd British Infantry Brigade (Long Range Penetration)—almost all British troops, together with an ever mounting number of Corps troops presented a serious medical problem. The bed strength to deal locally with the casualties was not adequate, especially so in the case of British troops for whom only 900 beds were available. 14 BGH which was recently withdrawn from Imphal, was available at Dimapur but it was in transit to Comilla, and the Fourteenth Army did not accept the suggestion of the Corps that this hospital should open in Dimapur. 53 CGH which was capable of opening up 600 beds, was moved to Deragaon on the Assam Grand Trunk Road where no suitable site was forthcoming, and eventually it was moved to Golaghat where it opened considerably later. However, lack of hospital accommodation did not make itself felt because three ambulance trains were available at Dimapur and casualties could be evacuated to the rear with expediency. During the critical days of the siege of Kohima the 66 CGH alone was available and all the surgical cases had to be dealt with by the surgeon of the hospital. Fortunately 2 Neuro-Surgical Unit was also attached to the hospital and thus two surgeons became available for working up to 24 hours a day between them. The theatre was seldom free, and almost continuous surgery was undertaken round the clock. But the Fourteenth Army was unable to provide extra surgical assistance. However, by 21 April three more surgeons, one from a Mobile Surgical Unit and two from a beach group field hospital in the Bombay-Poona area still under command of the Corps, who had been called up, had arrived, and this provided two extra surgeons to be attached to the hospital and one surgeon to accompany the Long Range Group (23rd British Infantry Brigade). This move did not meet with the approval of the GHQ (India) who

were however prevailed on to sanction the retention of the surgeons to cover the emergency period. It is evident therefore that during this period medical cover provided was one of considerable improvisation.

The heroic work of the medical services in the Kohima garrison has already been referred to. The 5th British Infantry Brigade led the 2nd British Division's advance up the road to Kohima. 5 British Field Ambulance accompanied the brigade and evacuated the casualties to Dimapur. Heavy fighting took place in the Zubza area and beyond and considerable casualties were incurred. There was no shortage of ambulance cars and the roads were not unsatisfactory. In addition to the MAS vehicles ambulance cars of the American Field Service were available for reinforcement.

During the early phases of this operation the incidence of psychiatric casualties was considerable and at first it was a difficult problem to administer proper treatment in forward areas owing to lack of personnel and accommodation. The hospital in Dimapur was too hard pressed to give careful attention to these cases at the base. By 24 April it was possible to set up a psychiatric centre at PoupHEMA with the aid of the 76 Indian Staging Section. Here most valuable work was performed and 117 patients of a total of 181 were returned to their units within five days of their arrival fit for duty. The number of relapses was negligible.

Medical Planning XXXIII Corps

It was anticipated that XXXIII Corps would be able when fully assembled to launch a full scale offensive on the Japanese positions in the Kohima area, whereby an advance along the Imphal-Kohima road with the object of linking up with IV Corps could be ensured. On the other hand, the possibility also existed that before this was done the Japanese might make an all-out effort to liquidate the Manipur Road Base and cut the Railway communications. An alternative base was to be provided at Gauhati with a L of C forward via the railhead at Salana-Jakhalabanda-Silghat. Forward planning was therefore based on both these probabilities in the early days. However by the third week of April it appeared that the latter eventuality would not arise and planning thereafter was based on an advance.

Early treatment and evacuation were to be carried out in the forward areas in the usual manner by the RAPs and divisional field ambulances. MDSs were to be reinforced by the inclusion of surgical teams from Mobile Surgical Units and CCSs, or General Hospital, as available. 13 Indian CCS and 7 and 8 Malaria Forward Treatment Units (MFTU) were to be forward of Manipur Road Base where suitable sites were available. The principle of keeping one MFTU open keeping the other closed for a possible early move was to be observed. Evacuation during the advance along the Dimapur-Kohima-Imphal axis was to be mainly by road. The only operational airfields along this road were at Manipur Road and Imphal and the airfield at the latter place could be used only in fair weather. For planning purposes the operations and medical cover were considered in specific stages.

First Phase: Forward medical cover was to be provided by divisional units. One mobile surgical unit or surgical team was to be attached to the main MDS in the area. One staging section was to be located between Kohima and Manipur Road, and 13 Indian CCS was to function in Manipur Road itself. 7 MFTU was to commence functioning whilst another was to remain closed, ready to move forward if required. A second CCS when available was to remain closed in the same area. Evacuation from Manipur Road was by ambulance trains to Golaghat and Jorhat by ambulance trains.

Second Phase (Advance from Kohima): The forward troops at this stage would be the 2nd British Division. Casualties from forward areas were to be evacuated as usual. It was anticipated that bearer companies would be required at this stage. One CCS was to move forward to Kohima and commence to function while the one functioning at Manipur Road was to close and move to Kohima and remain in reserve. The same procedure was also to be followed by the MFTUs. More staging sections were to be provided for the Dimapur-Kohima L of C. Evacuation was to be from CCS at Kohima to Manipur Road and thence by ambulance trains to Jorhat and Golaghat.

Third Phase (Link up with IV Corps): It was considered preferable to have two CCSs functioning in Kohima after the two Corps had linked up, as certain troops would be operating off the road and Kohima was the most accessible centre for collection of casualties. This disposition was however dependent on tactical dispositions, positioning of defended localities and zones, the state of the road and vehicles available. After the Kohima-Imphal road was reopened a certain amount of evacuation forward into Imphal was practicable, but this was to be limited to serious cases.

The medical cover for operations along collateral axes by the 23rd British Brigade and other troops was anticipated to present some difficult problems. The establishment of Jeep evacuation along jeepable tracts was to be developed to the utmost as this was the only effective method in the state of the terrain. ADS or MDS was to be located in the vicinity of the jeephead. Forward of this evacuation was to be carried out by hand carriage. In view of the special training of the personnel of the 2nd British Division and the 23rd British Brigade it was considered necessary to avoid evacuation of casualties from these formations beyond the hospitals directly serving XXXIII Corps. It was however to be made clear that this fact should not be allowed to prejudice efficient treatment of casualties, as enough hospital beds were available to meet any emergency and the evacuation of such casualties as were not likely to become fit for full duty under three months was recommended.

Estimate of Casualties. (a) *Sick:* It was estimated that the sick rate would normally be 3 per 1,000 per diem or 120 for the Corps (Corps strength 40,000). This figure was capable of considerable increase if malaria discipline was neglected or operations were to take place in particularly malarious districts. The figure was based on the experience of the Fourteenth Army. (b) *Battle Casualties:* In view of the compara-

tive light arming of the Japanese forces it was not expected that this would be unduly heavy. Taking even the outside estimate of ten per cent. casualties, the number of casualties would be 4,000 of which 66½ per cent., approximately 2,700, would require treatment in rear medical units. Such numbers would be a strain on medical units but with judicious evacuation spread over the period of the campaign, it was expected that there would be no major difficulties in dealing with the wounded. Actually the figures were expected to be lower as the 'G' estimate envisaged that only about 20-30 per cent. of the troops would be in actual contact with the Japanese during the operations.

Medical Order of Battle XXXIII Corps

2 Div	..	No 4 Fd Amb
		No 5 Fd Amb
		No 6 Fd Amb
		No 2 Fd Hyg Sec
161 Bde	..	No 75 Ind Fd Amb
33 Bde		No 44 Ind Fd Amb
23 Bde		Medical Elements of columns with own 30 bedded hospital.

202 L of C Area

No specific field medical units. Hospitals in Manipur RD Area and Area MASs, AMUs, Nos 5 and 6 MFTUs available for use.

Corps Troops

No 13 CCS
 No CCS (asked to be earmarked but not yet allotted)
 No 7 MFTU
 No 8 MFTU
 No 67 Ind Fd Amb
 No 19 Fd Hyg Sec
 No 82 Mob X-Ray Unit
 No 14 Mob Surg Unit
 No 33 AMU
 No 44 AMU
 No 45 AMU
 No 67 Ind Staging Section
 No 76 Ind Staging Section
 No 75 Ind Staging Section To form together improvised
 One Pioneer Coy Bearer Coy
 *No 5 Fd Bearer Coy (Less 1 platoon)
 No 61 MAS
 No 5 Fd Transfusion Unit.

In addition to the above, in view of the existing requirements, the following extra units were required:—

*At the moment in Bombay Area. Fourteenth Army had been asked to call forward.

1. 1 Staging Section.
2. 1 Mobile Surgical Unit (No. 16 available XXXIII Corps resources).
3. 1 Mobile X-ray Unit.

The Battle for Kohima

By the end of April the Japanese advance had been blunted and their efforts to reach the railway had been frustrated. The Japanese forces were contained in the Kohima area and their patrols north and west were being steadily pushed back. The build up of the 2nd British Division was nearing completion and it was ready to commence the operations. The Japanese positions were being softened by aerial and artillery bombardment. The assault on Kohima had been timed to commence on 30 April, but inclement weather had so affected deployment that it was started ultimately on 4 May. The plan in brief was for the 4th and 5th British Brigades to strike from the flanks whilst the 6th British Brigade was to penetrate the centre along the axis of the FSD. The 161st Indian Infantry Brigade at Jotsoma was kept as divisional reserve whilst the 33rd Indian Infantry Brigade (7th Indian Division) in the Dimapur area formed the Corps reserve.

The attack commenced on 4 May according to plan. The 4th British Brigade whose objective was to seize the GPT Hill and exploit to the north-east met with some initial successes, and by 1500 hours the attack on the GPT ridge itself was launched. After heavy fighting part of the ridge was captured but the Japanese held tenaciously to the north-east sector of the ridge. The 5th British Brigade penetrated to the Naga village, the same day, and the advance troops had reached the village by 0830 hours on 5 May. The objective was the establishment of a brigade locality in the village which would dominate the Japanese communications to the east. However, the Japanese launched heavy counter-attacks on the night of 5/6 May and severe hand to hand fighting ensued, but the positions held by the brigade were largely retained. The 6th British Brigade in trying to break out from the Garrison Hill met with only partial success even though it was anticipated that the flank attacks would render its task easier. Fierce fighting continued throughout the day in this sector but the attack on Picquet Hill failed and the attack on FSD ridge was only a partial success. Thereafter efforts were made to consolidate the gains and brief forward troops to resume the attack. On the following day the north-east sector of the GPT ridge was cleared, but the position could not yet be considered firm as the locality was under heavy fire from the Aradura spur and the lower slopes of the ridge. The 33rd Indian Infantry Brigade was then brought forward from the reserve and placed under command of the 2nd British Division to reinforce the attack in the centre. On 7 May the attack in the centre was resumed with the Jail Hill as the objective by troops of the 33rd Indian Infantry Brigade. In spite of heavy shelling the attack was pushed forward and the objective was reached, but in the face of intense and accurate shelling it was found impossible to consolidate the position, and the troops had to withdraw. The heavy fighting from 4 to 7 May had not produced any decisive results and the succeeding days were utilised for preparations to

resume the offensive. The forward troops were still in contact with the Japanese and brisk patrol activities were maintained.

On the night of 10/11 May the 4th British Brigade launched an attack on the positions held by the Japanese on the lower slopes of the GPT ridge, and on the morning of 11 May the 33rd Indian Infantry Brigade commenced the attack on Jail Hill and DIS area. By noon of 11 May the GPT ridge had been cleared and the Jail Hill and DIS area had been reached. The Japanese fought back tenaciously and the situation in the DIS area was most confused. On the night of 12/13 May the Japanese withdrew from the DIS area and on the following day positions on the Jail Hill were consolidated. In the DC's Bungalow area, which had been isolated, the Japanese were holding grimly to their positions. On the morning of 13 May these positions were attacked with tank support and the Japanese held positions were liquidated. By 1400 hours on 13 May, the DC's bungalow area had been completely cleared and the familiar positions of FSD, DIS, Jail Hill, etc., had all likewise been cleared of the Japanese troops.

The first phase of the battle for Kohima had been brought to a successful conclusion. It was essential not to allow any respite to the Japanese forces to recover and reorganise. The Japanese, in spite of these reverses, were still holding commanding positions in the Naga village and the Aradura spur to the south-west. Not until these positions were captured could Kohima be regarded as a secure base for further operations.

Between 14 and 20 May, battalions of the 6th British Brigade and 161st Indian Infantry Brigade were withdrawn to Dimapur for a period of rest and refitting. 268th Indian Infantry Brigade (21st Indian Division) arrived on 16 May and relieved the 6th British Brigade. This brigade took over the DC's Bungalow sector and did extensive and vigorous patrolling and defeated Japanese attempts to penetrate into this sector.

On 19 May the 6th British Brigade made a final attempt to clear the Naga village by an attack on Pt. 5120, the key of the defensive system of the Japanese. The preliminary phases of the attack were successful but soon stubborn Japanese resistance brought the advance to a halt. On 20 May HQ 7th Indian Division arrived from Arakan and was allotted to the XXXIII Corps. The headquarters of the division was established at MS 32. The 114th Indian Infantry Brigade arrived two days later and moved to MS 34 area. The 33rd Indian Infantry Brigade relieved the 5th British Brigade which had been in continuous action for over a month and HQ 7th Indian Division took command of the 33rd and 161st Indian Infantry Brigades. The Corps also received reinforcements in artillery.

The two Indian brigades held the front to the north of the Garrison Hill. The 33rd Indian Infantry Brigade took up the struggle in the Naga village where the 5th British Brigade had left. After preliminary actions the attack on Pt. 5120 commenced on 25 May, supported by artillery and tanks. Fierce fighting ensued and even though the summit was reached it had to be abandoned later in the face of heavy shelling. The Japanese followed up with some vicious counter-attacks on the brigade

perimeter but these were easily repulsed. On 28 May the attack was resumed after a preliminary softening by bombing but the attackers were again repulsed. A surprise attack the same day by a battalion of the 33rd Indian Infantry Brigade resulted in the capture of a feature known as Gun Spur, about 400 yards south-west of Pt. 5120, thereby outflanking the Japanese defences. Later in the same day, Church Knoll, the highest point in the Naga village, also fell. The Japanese made no attempt to regain these positions. By 2 June the Japanese completely broke contact in this sector and withdrew to the east. The same day the 114th Indian Infantry Brigade relieved the 33rd Indian Infantry Brigade and took over the task of preventing Japanese escape to the south.

Clearing the Aradura Spur

The 4th British Brigade was in the meantime engaged in brisk patrol activities to the south, preliminary to operations for the clearing of the Aradura spur. The deployment for this operation was as follows:—

The 6th British Brigade was on the right (between Oak Hill and Norfolk ridge) whilst the 4th British Brigade held the centre from the left of the 6th British Brigade to the right of the 33rd Indian Infantry Brigade in the Pimple Hill. The 5th British Brigade was held as reserve and the HQ of the 2nd British Division was established in Jotsoma.

The operations commenced on 26 May. Despite the rainy weather the advance had reached a point half-a-mile to the west of the Aradura ridge without encountering any opposition. The following day both 4th and 5th British Brigades had established themselves on a line at the foot of the northern face of the spur whilst the 6th British Brigade continued advance to the summit of the Aradura spur. Later in the day, the positions occupied by the 4th and 5th British Brigades became untenable in view of heavy shelling from the reverse slopes of the Aradura ridge, and these brigades therefore had to be withdrawn to their start line. To the right 6th British Brigade however continued operations and by the evening had established itself south and west of the Crest.

Later the 6th British Brigade occupied a ridge to the south of Aradura village whilst the 4th British Brigade was withdrawn to a position to the north of the GPT ridge. The 5th British Brigade was detailed to carry out the outflanking attack. On 1 June the operations to the east of the road commenced with vigorous patrolling and aerial and artillery attack. The 6th British Brigade maintained the pressure on the Crest when the 5th British Brigade commenced the outflanking attack on 3 June with a patrol to the Big Tree Hill. This hill was found unoccupied and the advance was continued to Dyer Hill further to the east where stiff resistance was encountered. The following day this feature was occupied but it was found that the Japanese had returned to the Big Tree Hill and were holding it in strength. On the following day a full scale attack on Big Tree Hill was launched and the hill was captured the same day. The Japanese promptly withdrew also from the nearby features. This apparently was the beginning of the end in so far as the Aradura position was concerned. Allied troops were now in a position to cut off the Japanese on the Aradura spur from their bases and strong

points to the east of the road. Realising this the Japanese forces commenced a hasty withdrawal, and by nightfall on 5 June the reconquest of Kohima was completed and the long and arduous battle which had lasted for two months came to end.

Medical Cover in Forward Areas

At the commencement of the battle for Kohima the following medical units were under the command of the 2nd British Division:—

- (a) 4 Br Fd Amb.
- (b) 5 Br Fd Amb.
- (c) 6 Br Fd Amb.
- (d) 75 Ind Fd Amb.
- (e) 2 Fd Hyg Sect.
- (f) 14 Ind Mobile Surgical Unit.
- (g) 44 Ind Anti-Malaria Unit.
- (h) One platoon of 5 Ind Bearer Coy (under command of 75 Ind Fd Amb).

The medical arrangements for the evacuation and treatment of casualties in the divisional area are given below:—

- (a) Car posts were established at Lancaster Gate to the south of the main road in the MS 44 area and between MS 45 and 46.
- (b) Walking Wounded Collection Posts were established at Lancaster Gate and adjacent to the Jeep track at MR 474669.
- (c) *ADSs*
 - (i) ADS 6 Br Fd Amb at Garrison Hill.
 - (ii) ADS 75 Ind Fd Amb below hospital spur.
 - (iii) ADS 5 Br Fd Amb to the north of the Naga Village.
 - (iv) 4 Sections of 4 Br Fd Amb with 4th Br Brigade.
- (d) *MDSs*
 - (1) MDS at MS 42 on the lower road formed by 4 Br and 175 Ind Fd Amb.
 - (2) 5 Br Fd Amb at Zubza (MS 36).
 - (3) MDS 6 Br Fd Amb in the Jotsoma Area.

14 Indian Mobile Surgical Unit was attached to the MDS at MS 42 and a surgical team from 13 British CCS was attached to the MDS located in the Jotsoma area.

These arrangements worked satisfactorily throughout the subsequent operations of clearing up the Kohima region. The two MDSs with the surgical teams received the casualties from the 4th and 6th British Brigades and evacuated them to the rear. These two MDSs were well equipped and accommodation was satisfactory and surgical cases could be detained about 48 hours after operations. Only life saving surgery was attempted at this level and consequently much of the surgical work consisted in making the patients fit for evacuation. ADS 5 British Field Ambulance accompanied the 5th British Brigade in its left hook to the north of the Naga village. Casualties from this brigade were carried by Naga and Nepalese porters across very difficult terrain to the

ADS of the brigade. From the ADS they were again evacuated by porters to the MDS at MS 42. The MDS at Zubza functioned as a staging post for the casualties evacuated from the forward MDSs. The difficulties in evacuation were considerable. On the evacuation routes sniping and ambushes were frequent and shelling was not uncommon. But the locally recruited porters behaved admirably under fire. With the onset of monsoon the tracks became sodden and slippery and the jeep tracks available were rendered difficult to negotiate. In spite of all these handicaps evacuation of casualties proceeded satisfactorily. Armoured ambulance cars were used and these were occasionally shelled and fired on the Kohima-Dimapur road. One of the vehicles was destroyed but evacuation by these vehicles proved useful.

After the capture of the GPT ridge, Jail Hill, FSD and DIS the MDS of the 6th British Field Ambulance was moved forward to below the hospital spur, where it was subsequently converted into an improvised field hospital capable of holding up to 170 patients. When the 7th Indian Division began its operations, medical cover was not radically changed. As a matter of policy it was laid down that all efforts should be made to avoid any duplication of medical installations, especially the MDSs and also to pool all bearer resources. Accordingly the MDS 6 British Field Ambulance on the hospital spur was reinforced by the opening of the MDS 44 Indian Field Ambulance alongside the former. This combined MDS was used for the reception and evacuation of casualties up to the time when the Aradura spur was cleared. With the capture of Kohima and the commanding features surrounding it the rear medical units began to move forward to Kohima thereby relieving the strain on the MDSs and long evacuation routes.

Operations of the 23rd (LRP) Brigade

A brief reference may be made here to the operations of this brigade to the east of the main road in an almost inaccessible terrain which helped considerably in bringing the operations for the capture of Kohima to a successful conclusion. The 23rd Brigade was organised into six columns, which were fully trained and adequately equipped for jungle fighting. Starting from the plains of Assam on 12 April, these columns were to advance south and east and cut the Japanese lines of communications to the east. Initially they met with little opposition, but later on brisk skirmishes were common. On 22 April one of the columns captured Phekerkrima. The column caused considerable anxiety to the Japanese who believed that a major attempt was being made to sever their lines of communications. By the third week of May the advance elements had reached the Jessami area, causing considerable consternation amongst the Japanese. The Japanese evacuation of the Naga village and the Aradura Spur was undoubtedly hastened by the activities of these columns. The brigade constructed air strips in the axis of their advance from which light aircraft operated, bringing in supplies and evacuating casualties. Casualties were also evacuated for a time through the ADS of 5 British Field Ambulance.

Medical Arrangements in Rear Areas

On 1 May evacuation forward of Priphema (MS 28) on the

Kohima-Dimapur road was placed under the control of HQ 2nd British Division whilst rearward of this point evacuation was to continue under Corps arrangements. 67 ISS at Phipema was detailed to function as a relay post to take over the casualties from Divisional units and arrange for evacuation through the rearward link. For this purpose additional personnel were attached to the ISS for nursing and stretcher bearer duties. Twenty-four ambulance cars were to function on the forward link and a similar number was allotted to the rearward link. OC 61 MAS was entrusted with the task of organising evacuation on the rearward link under the medical supervision of the OC 67 ISS. It was decided that the number of cars in an ordinary convoy should be five, but this was not to interfere with the rapid evacuation of urgent cases. It was also decided that later on another relay post would be established at Nichuaguard.

It was mentioned earlier that there was an acute shortage of beds for British troops in this sector. On 29 April, 22 British CCS arrived in Manipur Road and it was decided to open this unit alongside the 66 CGH to provide additional beds for British troops. The British section of the 66 IGH was taken over by the CCS which opened on the same site as the hospital. This unit was to admit primarily surgical cases and commenced to function on 4 May. On 1 May 26 Indian CCS arrived in Jorhat and was detailed to open at Golaghat as a Corps Light Sick and Convalescent Centre. This unit was to admit the following types of patients:—

- (a) those discharged from hospitals or CCSs in Corps area not requiring prolonged convalescence in a normal ICD,
- (b) casualties held in Corps or Divisional medical units not requiring full hospitalisation,
- (c) psychological casualties requiring longer period of rest than was available at the centre at Phipema,
- (d) men in units who in the opinion of the unit medical officer require some simple treatment and rest,
- (e) patients discharged from hospital to reinforcement camps requiring further short period of convalescence.

The CCS opened up and commenced to function on 17 May and helped considerably to ease the strain on hospitals. On 2 May it was decided to open 38 BGH (which had arrived earlier in Jorhat) in Golaghat and move 53 CGH to Manipur Road. The latter move was not approved by the commander XXXIII Corps as Manipur Road was virtually in the front line and had to receive combatant formations in a tactical role. Hence 38 BGH opened alongside the 53 CGH and took over some of the latter's accommodation. The site was slightly cramped but this could not be helped until tactical situation improved and medical units moved forward. In addition to 6 MFTU which was already functioning at Golaghat and 5 MFTU at Dimapur, it was decided to keep 7 MFTU at the latter place ready to open in case the necessity arose later. These arrangements were in force until the operations for the capture of Kohima concluded.

However, when, by 18 May, the Dimapur-Kohima Road had become reasonably safe from attacks by infiltration, it was decided to

establish Light Section 13 British CCS with 76 ISS at MS 31 where a site was to be prepared out of jungle covered area. Pending the full occupation of Kohima the Light Section was to run a fifty bedded hospital at this site with provision for emergency surgery. The psychiatric centre was also to be moved to this area. The development of an intermediate area was essential especially in view of the fact that a considerable time lag was anticipated before hospital installations could be established in Kohima after its relief, as it was expected that Kohima would be in the front line for a considerable period after the operations to clear the Japanese had concluded. 7 MFTU also started functioning in Dimapur on 18 May.

Evacuation Ex-Corps Area: The evacuation policy adopted for this phase of operations was that the longest holding period should be one month in this theatre whether at Golaghat or Jorhat. Any cases likely to need longer period of treatment were to be evacuated as early as possible. In view of the limited bed strength in this theatre and the superior facilities for surgery and general comfort in hospitals in the rear areas it was evident that this policy was fully justified. On 20 May it was decided to develop evacuation to a considerably greater degree than before by ambulance train, river steamer, and air ex-Jorhat. The evacuation arrangements were however not quite satisfactory and patients were delayed considerably in transit. Owing to lack of proper staging posts these delays were causing much discomfort to the casualties. In view of the necessity to step up evacuation rate and improve facilities available in transit, the following arrangements were recommended:—

- (a) strict care was to be exercised in selecting only the really fit cases to undertake the journey, (b) the river steamers to be taken over by the Fourteenth Army and these to be run punctually and only as Red Cross vessels, (c) reduce by half the period in meeting trains and steamers and (d) increase air evacuation further.

This was considered to be feasible especially as the Manipur Road airstrip was to be available shortly in addition to Jorhat.

Use of Medical Units in forward areas

(a) *Collection of Casualties:* In hilly and jungle covered areas which the troops were occupying in the phase of operation just described, the stretcher bearer again came into his own and one could not have too many of them. Battalion stretcher bearers did sterling work under heavy fire and the wisdom of having trained reserves of stretcher bearers was fully illustrated. It was felt that if the need arose every soldier should be capable of carrying out bearer duties. Fortunately the first person to admit this was the soldier himself. In these operations only a platoon (72 bearers) of a regular bearer company was used and these were largely employed to supplement field ambulance bearers in evacuating casualties from RAP to ADS and occasionally from ADS to MDS where wheeled or mule carriage was not possible. Locally recruited Naga porters were outstandingly successful. They were willing, indefatigable, cheerful and amazingly gentle. They did not panic under fire, but it was necessary to

keep them out of it because they discontinued their work to dispose of the dead and had a considerable mourning period. Nepali porters were also used though with not the same effect. The jeep ambulance proved to be the most useful form of transport for conveying casualties in the forward areas. It was recommended that each field ambulance should have four jeep ambulances reducing if necessary the number of the usual ambulance cars allotted to these units. Armoured ambulance cars were also used by the 2nd British Division with amazing performance. Their usefulness in evacuating casualties while fighting against an adversary who had scant respect for the Red Cross cannot be over-emphasised. The number of casualties collected by this means who would not have got back otherwise was considerable. Mule carriage of casualties was only used sparingly. It was found far more uncomfortable than hand carriage. The mules have undoubtedly their uses but were generally considered to be far more useful in a 'pack' role than as casualty carriers. Training of mules for both purposes was considered to be useful.

Tactical use of Field Ambulances: The 2nd British Division was fully trained for a combined operational role and its divisional field ambulances had the companies split into sections allowing thereby attachment to battalions. This organisation was of doubtful value in the present series of operations. However, on what has been practically a solitary axis of evacuation, the provision of field ambulances had been more than liberal. It was the experience that an ADS can only be effective and function satisfactorily when formed by a full company, and this certainly was the experience of 75 Indian Field Ambulance. While the field ambulance company should certainly be capable of sub-division, if required, it was felt that the circumstances in which this was justified were limited.

The 2nd British Division maintained two MDSs, one on each arm of the loop immediately north-west of Kohima; and there was constant discussion as to their ideal composition. Both were constantly busy and ultimately developed into what may be described as field hospitals by the addition of surgical teams. 4 (British) Field Ambulance at MS 42 on the main Dimapur-Kohima Road was in addition reinforced by HQ 75 Indian Field Ambulance to deal with Indian casualties. In practice however no distinction was maintained between Indian and British casualties. The development of MDSs into improvised field hospitals was an obvious necessity because it was incumbent to provide accommodation for holding post-operative cases, whenever the need arose.

The importance of providing facilities for forward surgery when a long line of evacuation exists which may take anything up to 36 hours or more before the patient arrives at the CCS needs no argument. During the battles round Kohima casualties had to be collected from forward areas, carried by porters for more than an hour or so to the ADS and then again to the MDS by bearers, or if lucky by Jeep ambulances. In view of the Japanese habit of infiltration, evacuation rearwards of the MDS was only permitted during the day. This long delay in forward areas clearly indicated the necessity for provision of surgical facilities as far forward as possible.

The surgical work carried out in the forward areas was mostly in the following categories:—

- (a) fracture of the femur and compound fractures generally,
- (b) wounds of the gluteal region with extensive destruction of muscle,
- (c) 'abdominals' where justified, (d) selected chest wounds and (e) life saving surgery generally.

The CCS Area: The CCSs were used during this campaign in an unorthodox manner owing to peculiar circumstances of the fighting. At the commencement of the present operations no CCS was available and hence 66 IGH at Dimapur functioned as a CCS for the Corps. It was well sited for the earlier phases of the operation but as the L of C lengthened there were obvious difficulties in evacuation. When the 22 British CCS arrived it was detailed to open up alongside 66 IGH. This would appear rather an uneconomical use of the CCS, but it should be remembered that it was impossible even to open a Light Section forward as there was literally no site where the section could be defended against infiltration attacks, and the area up to MS 42 was highly malarious. In view of all these difficulties it was decided to keep the CCS at Dimapur itself. Once the Japanese were cleared from Kohima a CCS was moved forward to MS 31 where considerable preparatory and anti-malaria work had to be done before the site could be used. Some difficulties did arise in administrative matters as the hospital was not directly under the command of the DDMS XXXIII Corps but under the L of C Area. It was felt that in such circumstances full powers should rest in the DDMS of the Corps.

Use of the MASs

During the early stages of the operations the 2nd British Division had not received their ambulance cars and consequently the two MASs available had to take on evacuation in the forward link as well—which they did quite successfully even though one of the sections had only half its authorised strength of vehicles. It was agreed that this was a bad practice and should not be resorted to if it could be avoided. Maintenance of vehicles became bad, drivers got no rest and in consequence standard of driving deteriorated and the patients suffered. With the arrival of the ambulance cars of the 2nd British Division and a platoon of American field service it was possible to reorganise allocation of ambulance cars, the MAS being allocated entirely for the evacuation in the rear link. This change-over produced an immediate improvement in the standard of driving. It was found from experience that the optimum speed for ambulances was five to ten miles an hour and faster driving had deleterious effects on the patients. Proper staging posts should be arranged in case the former speed limit is adhered to.

Psychiatric Casualties

It was abundantly proved both in the western and eastern theatres of war that the proper place for treatment of the majority of psychiatric battle casualties is in a centre sufficiently far from the noise and

atmosphere of the battle to enable the patient to recover his balance, but not so far back that a feeling of complete withdrawal from the battle area has been achieved and where chronicity and fear of return in fact may be aggravated. It was felt that even though it might be desirable to organise a unit specifically designed for this purpose, such an organisation would have very little to do during training periods resulting in tying up of valuable manpower which might effectively be employed elsewhere. The practical answer to the problem therefore obviously was to improvise a field hospital from one of the following:—

- (a) part of HQ of a field ambulance or a complete company,
- (b) part of a CCS, or (c) an Indian Staging Section.

To such a unit or detachment a psychiatrist team may be attached. The team should preferably contain one graded psychiatrist and one nursing orderly (mental).

The psychiatric centre during the course of the present operations was located at Priphema (MS 28) and was formed by the 76 ISS and the psychiatrist of the 2nd British Division was attached to the centre which did very commendable work. The centre was provided with 30 beds and all the necessary stores and equipment. Cases ranging from acute terror state to simple exhaustion were treated at this centre and the results were very encouraging. Nearly 50 per cent. of those admitted were returned to full duty with an average stay of four to five days at the centre, and the relapse rate was negligible. Evacuation from this centre should be to a CCS or hospital with a special wing for reception up to 75 psychiatric casualties.

The somewhat unsatisfactory and indifferent conditions obtaining in a reinforcement or rest camps made it necessary to open a separate Corps Light Sick and Convalescent Centre. 22 Indian CCS managed this centre and it was hoped that through these means manpower wastage could be controlled and duration of stay in hospital reduced. It was not in anyway intended to substitute the convalescent depots but to avoid these being used in unsuitable cases. It was also to be used for psychiatric cases not fit for an early return to the unit from the forward centre.

Health of the Troops

The troops on the whole maintained a fairly good standard of health during the present phase of operations apart from isolated units and detachments. The sick rate was rather high to start with, namely 7.06 per thousand per day by the end of April, but in the early weeks of May there was a distinct improvement and the rate came down to 4.30 per thousand. There was a slight rise in the middle of May and the figure for the last week of May was 4.65 per thousand. The incidence of sickness amongst Indian troops was very high in the early stages (the proportion of Indian troops to British troops in the theatre was approximately 2:3 during the whole period of operation). In April the average rate of sick amongst Indian and British troops was 7.64 and 6.83 respectively. But as conditions improved the rate amongst Indian troops showed very considerable improvement. By the middle of May the respective figures

for Indian and British troops were 4.21 and 8.72. The main diseases affecting the troops were malaria, dysentery and diarrhoea, and venereal diseases. Some formations of the 7th Indian Division were also affected by malnutrition and exhaustive investigations were conducted to find out the causes of deficiencies.

Malaria

The incidence of malaria in the early phases of the operations was rather high and in the early first three weeks of May particularly so. The rate of incidence in April was 0.59 per thousand and by 20 May the rate had increased to 1.21 per thousand. The majority of cases were TB infection but a few patients discharged and cured were readmitted later with M.T. infection. The increase of incidence in May was anticipated as breeding and transmission are both more active in May. The troops had reached comparatively safer areas by the end of May but in reaching these they had to fight through very highly malarious areas. The incidence of malaria during the month of May in the formations of XXXIII Corps is given below:

Formation/Unit	Strength	No. of diagnosed Malaria cases	Rate per 1,000
2 Div	14,200	223	16
7 Ind Div	10,300	406	39
23 Bde	3,800	13	3
21 Ind Div	798	4	5
268 Bde	1,920	21	6
Other Corps Troops ..	8,700	79	9
Totals ..	39,718	746	

In view of the exigencies of the operations during this phase main reliance had to be placed on personal prophylaxis in the matter of prevention. Fortunately at this period olive green cotton battle dress was issued to the troops and thereby this aspect of personal protection was ensured once and for all. In the matter of enforcement of other measures of personal protection, like the use of anti-mosquito cream, no difficulty was experienced. Mosquito nets were used wherever possible, but face veils were not very popular as they further reduced visibility which in the jungle was usually poor enough. Gloves and face veils were however used by troops in the rear areas. Every unit had a month's supply of mepacrine tablets and rigid care was enforced on its administration. Except in slight discoloration of the skin no other untoward symptoms were noticed.

Three anti-malaria units were allotted to the Corps of which one was attached to the 2nd British Division. The latter was engaged in anti-malaria work including anti-larval and anti-mosquito measures in

the forward areas. The remaining two units were allotted to the L of C and rear areas. Four IMFTUs were available, two under the Command of the Corps and two under the Command of HQ L of C area.

Diarrhoea and Dysentery

The incidence of these diseases was well within limits, the rate during April being 0.36 per thousand. In the case of this group of diseases also there was a substantial increase in the incidence during May, the rate increasing to 0.66 per thousand. But this increase was short lived. All hygienic measures of control were enforced and at no time did these diseases give any cause for anxiety.

Venereal Diseases

The rate of venereal diseases was not particularly high and varied between 0.3 to 0.8 per thousand during the period under review. All measures including personal prophylaxis were enforced and the incidence was always under control.

Other diseases to which reference may be made are Infective Hepatitis, Diphtheria and enteric. There were only very few cases of these diseases and these call for no special comment.

Malnutrition

Frequent reports began to come in by the middle of May that a serious degree of malnutrition existed amongst the troops of the 33rd Indian Infantry Brigade and particularly in the 25th Mountain Regiment (Indian Artillery). Immediate steps were taken to investigate the circumstances of the incidence as a result of which it was established that high incidence of malnutrition existed and over 500 cases were detected who were either treated or undergoing treatment. These were admitted to 66 IGH and investigated thoroughly and treated. The condition when fully developed was suggestive of Sprue. The main features of the syndrome were (a) flatulent dyspepsia with anorexia, (b) diarrhoea with frequent loose pale frothy motions alternating with constipation, (c) glossitis with red smooth areas on the edges of the tongue, (d) angular stomatitis, (e) skin lesions characteristic of Vitamin 'B' deficiency, (f) loss of weight, lassitude and inability to carry out hard work, (g) anaemia with high color index. The incidence was not entirely limited to the 33rd Indian Infantry Brigade as mild versions of the same syndrome were found in patients from other formations as well.

It was suggested that the majority of patients were men enlisted from the scarcity areas of U.P. between 1940 and 1941. But this appeared to provide no rational explanation as the Jats and Ahirs by no means represented the whole personnel affected: for example fifteen Punjabi Mussalmans were admitted from the 25th Mountain Regiment alone. It was observed that of all the troops in the 7th Indian Division this brigade had the longest period of contact with the Japanese. Sleepless nights in cramped, uncomfortable and unhealthy surroundings over prolonged periods must inevitably have had their deleterious effects. Enquiries also elicited the information, possibly somewhat difficult to believe, that

the standard ration for the 25th Mountain Regiment, while in Arakan was as follows:—

Daily:—Biscuits . . .	4 ozs
Atta or Rice . . .	10 ozs
Tea, Milk and Sugar—Normal ration.	

There were no weekly additions. One orange or one banana and one issue of fresh vegetables were added monthly. During the whole period of seven months that the unit was in Arakan, fresh meat was issued only twice and during the preceding February half rations were issued. The gross deficiencies and the low calorific value of such a diet are only too patent. After its arrival in the Kohima sector, the rations issued were according to the normal scales. But it was obvious that the damage had already been done and a cure is not effected especially in the more seriously affected by a mere reversion to normal diet. However very liberal scales of diet including fresh milk, fresh meat, eggs, fruits were given to the patients in addition to treatment along the approved lines. The disease was fully investigated and all measures to prevent any further occurrences of this kind were recommended. It should be remembered that this type of illness does not occur unless improper feeding is persisted for a long time. The potential danger of this disease if proper care is not taken in the feeding of soldiers had been represented by the medical authorities many times prior to the present instance from the Medical Directorate, GHQ(I) down to RMOs of battalions.

Battle Casualties

During the period 15 April to 21 May, a total of 1827 battle casualties were admitted to various medical units of the Corps. The strength of the Corps also increased considerably during this period, from 16,565 in the middle of April to 36,999 in mid-May. The rate was the highest in the third week of April viz., 4.46 per thousand and the lowest, 1.62 per thousand, was reached in the third week of May.

Medical Stores and Equipment

The supply of medical stores and equipment was fairly satisfactory. During the siege of Kohima, however, for obvious reasons the garrison experienced some acute shortages especially in hypnotics and sera. This was only a passing phase and when the siege was lifted normal conditions were restored.

Transfusion Services

No 5 British Field Transfusion Unit was with the Corps during these operations and was located at Dimapur. In addition arrangements were made for stocking transfusion fluids which were also stored at the base depot medical stores of the Corps. The latter stocks included dry plasma, glucose saline and isotonic saline. Supplies for the Corps were to be drawn from either source as required. The field ambulances were to hold a minimum of three infusion boxes preferably at the MDS. These boxes were packed in a standard pattern and contained glucose

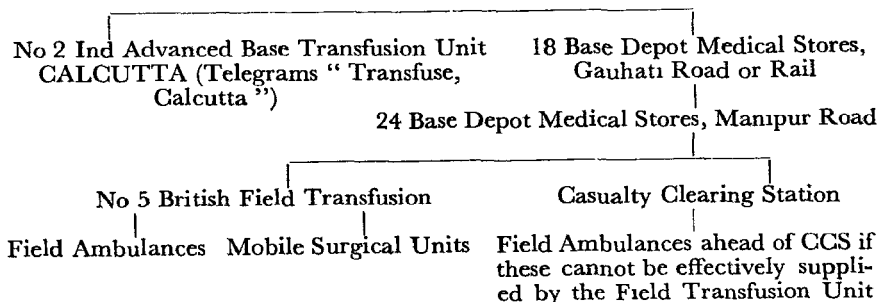
saline (four bottles), dried plasma (eight bottles), isotonic saline (two bottles), distilled water (eight bottles), together with plasma giving sets. As soon as one box was used up it was to be exchanged at the nearest centre. Even in cases where a field ambulance was located behind an advanced CCS the field ambulances were not to replenish their stocks from the CCS but were in all cases to indent on the nearest transfusion unit for supplies. The field ambulances on moving away from operational areas were to surrender to the nearest transfusion unit all the infusion boxes except one kept for any emergency. Casualty clearing Stations were to hold a minimum of three infusion supply boxes and extra stocks of glucose and isotonic saline. Procedure for replenishment was the same as that of a field ambulance. The advanced CCSs were to hold considerably greater stocks of transfusion supplies in addition to the authorised scale (10 infusion supply boxes, 60 bottles of isotonic glucose saline and 24 bottles of isotonic saline) for issue to field ambulances and mobile surgical teams. If there was no officer of a transfusion unit attached to the CCS then the resuscitation officer of the CCS was to be responsible for the maintenance of reserve stock. When the forward CCS was side-stepped by another the former was to hand over its transfusion reserve to the latter.

The scheme of supply of transfusion fluids to XXXIII Corps is given below. Arrangements were made to try to fly stocks of whole blood from Calcutta to Manipur Road. This scheme necessitated the location of the field transfusion unit near the airfield in order that blood could be placed in a mobile refrigerator immediately on its arrival.

ARMY TRANSFUSION SERVICE

SUPPLY LINE—XXXIII CORPS

No 2 British Base Transfusion Unit, Dehra Dun (Telegrams "Transfuse Dehra Dun") Rail



NOTE: (a) Only units marked actually held stocks of Plasma for issue to Field Units.

(b) Plasma was not to be issued by Medical Store if a Transfusion Unit was located in the vicinity.

(c) Mobile Surgical Units were to maintain their supplies through the units to which they were attached.

- (d) Staging Sections to be supplied with transfusion fluids only in cases of special emergency.
- (e) Hospitals in 202 L of C Area were to obtain supplies of crystalline solutions from their nearest Base or Depot Medical Stores. Plasma to be obtained by direct indent on No 2 Indian Advanced Base Transfusion Unit.

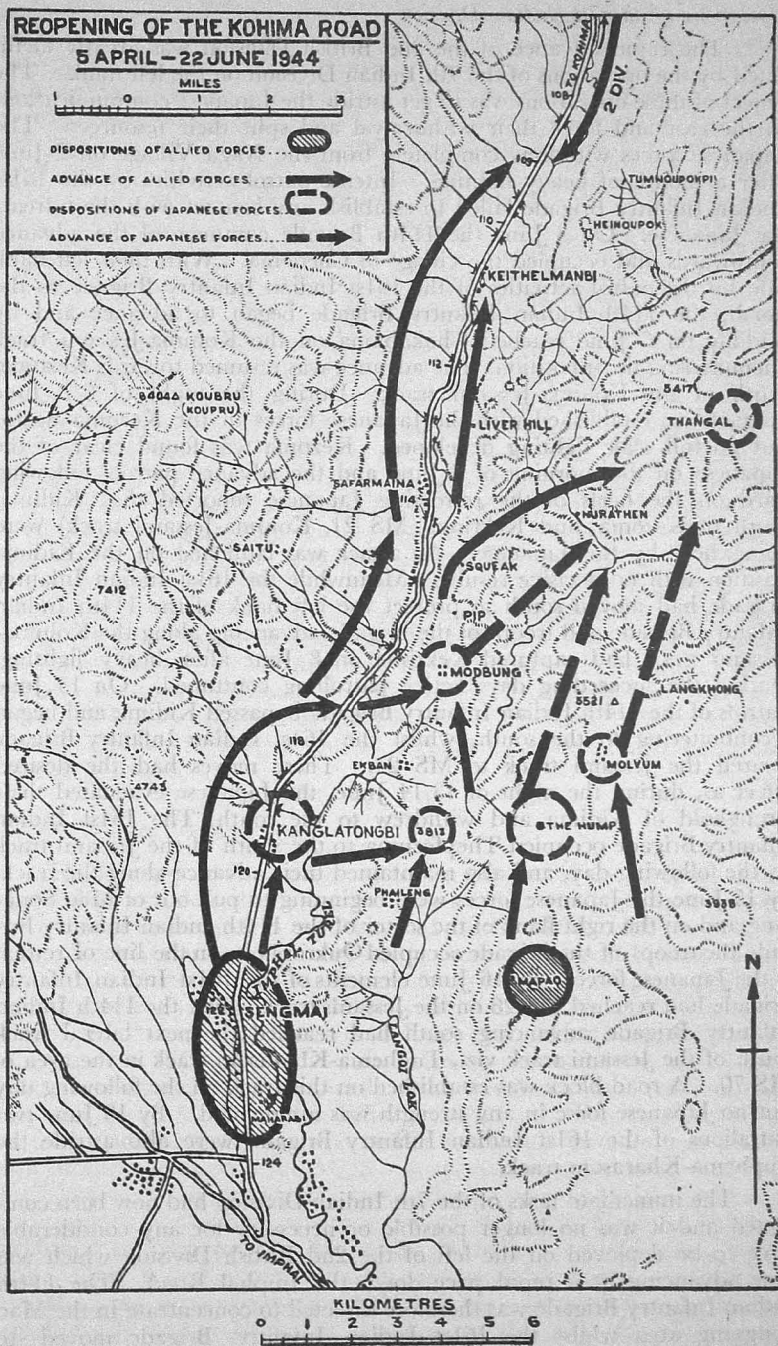
Rations

The supply of rations in this sector was very satisfactory. Occasional shortages did occur but these were only for very short periods. Sometimes the quality of fresh items supplied was not satisfactory and apart from this there is no comment to record.

Operations to open the Imphal-Kohima Road

Kohima was securely in Allied hands with the capture of the Aradura Spur and the Japanese in holding on to the commanding features around Kohima had suffered considerable casualties. The onset of the monsoon aggravated their supply difficulties as their line of communication lay along difficult mountain tracks. It was essential therefore to give no respite to the Japanese forces for reorganisation, and the task was to follow up immediately. The thrust along the main road was to be made by the 2nd British Division with the object of re-establishing contact with IV Corps. The 7th Indian Division was to advance south-east and south with the object of forming a constant threat to the right flank of the Japanese forces and harass their communications to the east. Further to the east the 23rd British Brigade was to strike through the hills up to Ukhrul and beyond. Forced off the main road by the advance of the 2nd British Division it was hoped that the Japanese forces would be caught between the 7th Indian Division and 23rd British Brigade. This plan utilised the special qualities of the troops available, the hitting power of the 2nd British Division, the ability of the 7th Indian Division to operate on an animal transport basis.

The advance was taken up by the 2nd British Division immediately after the capture of the Aradura Spur, and by the evening of 7 June advanced elements of the division had reached MS 55. On the morning of 8 June the 4th British Brigade made a rapid advance to MS 59. The first serious opposition was encountered in this sector where the road between MS 59-60 was heavily mined and covered by positions occupied by the Japanese in a small village to the east of the main road. Heavy fighting ensued causing considerable casualties to both sides, but on 13 June the village was captured and the road to the south was opened again. The 6th British Brigade now passed into the advance with an armoured spearhead and by the evening of 15 June reached MS 64½ where the Japanese again tried to halt or at least delay the advance. Some brisk fighting ensued but, brushing aside the opposition, the troops of the brigade reached a point about a mile to the north of Mao Songsang. On the following days stray Japanese formations operating on either side of the road in thick jungle forced the brigade to commence extensive mopping up operations. The advance was then taken up by the 5th British Brigade and Mao Songsang was occupied without a fight during the night of 17/18 June. The advance continued and the forward elements reached MS 78 by the evening of 18 June.



Operations of the 7th Indian Division

The rapid advance of the 2nd British Division was greatly facilitated by the operations of the 7th Indian Division on the left flank. The object of these operations was to get astride the Japanese communications to the east and force their withdrawal and split their resources. The Japanese forces withdrew completely from the Naga Village on 2 June after a month of heavy fighting. Intense patrol activities by the 161st Indian Infantry Brigade failed to establish any contact with the retreating Japanese. On 3 June the 114th Brigade commenced the advance southwards and occupied the village of Chedema. With their left flank safe by the patrol activities of the 161st Indian Infantry Brigade to the north, the 114th Indian Infantry Brigade began to advance and by midday on 6 June reached Chakabama on the Kohima-Jessami track encountering no opposition. The advance was resumed towards Kezoma, south of the Kohima-Jessami track. During the night of 6/7 June contact was established with the Japanese forces in the Kezoma Sector but no full scale fighting developed. Kezoma was found clear of the Japanese on the morning of 7 June and the advance patrols following hard on the heels of the retreating Japanese reported that Kidima, south of Kezoma, and Kekrima (MS 21, Kohima-Jessami track) were being held by the Japanese. An attack was launched on the Kidima position with no decisive results. Meanwhile the 161st Indian Infantry Brigade had moved south to protect the left flank of the 114th Indian Infantry Brigade and troops of the brigade advancing along the Kohima-Jessami track had captured Kekrima on 8 June after heavy fighting. During the succeeding days active patrolling continued. On 13 June patrols of the 114th Indian Infantry Brigade bypassed Kidima and began reconnoitering to the south, whilst the 161st Indian Infantry Brigade cleared the Jessami track to MS 24. These moves had the desired effect as, during the night of 13/14 June, the Japanese evacuated their stronghold of Kidima and withdrew to the south. The 161st Indian Infantry Brigade occupied Thepfezuma to the south of the Jessami track on the following day, and also maintained their advance along the track. By 15 June the Japanese forces were beginning to pull out of Mao Songsang and on the right flank of the sector of the 114th Indian Infantry Brigade the troops of the brigade occupied Oukrophoku on the line of retreat of the Japanese forces. By 16 June elements of the 161st Indian Infantry Brigade had reached MS 28 on the Jessami track whilst the 114th Indian Infantry Brigade advancing south had reached the next lateral track south of the Jessami track viz., Tuphema-Kharasom track in the area of MS 70. A road block was established on this track on the following day but no Japanese force in any strength was intercepted. By 18 June two battalions of the 161st Indian Infantry Brigade were also astride the Tuphema-Kharasom track.

The immediate tasks of the 7th Indian Division had now been completed and it was no longer possible or necessary for any considerable force to be deployed on the left of the 2nd British Division which was now advancing at a rapid pace down the Imphal Road. The 114th Indian Infantry Brigade was therefore directed to concentrate in the Mao Songsang area whilst the 161st Indian Infantry Brigade moved to

Tuphema area (MS 64 Imphal Road). Two battalions of the latter brigade were however left to keep a watch over the Jessami and Kharasom tracks. Though the division had not met the Japanese in any great numbers its operations were conducted in very difficult and mountainous country with a difficult L of C. The fact that their advance kept up with the 2nd British Division advancing along the main road was a creditable achievement. In this task the division was considerably helped by the operations of the 23rd Brigade (Long Range Penetration Group) operating to the left of the division which caused considerable dislocation to the Japanese L of C and inflicted many casualties.

The final stage in the opening of the Imphal Road was now reached. On 19 June the advance was resumed from MS 77 and after some brisk fighting, contact was established with the Japanese forces holding Maram in considerable strength. The Japanese intention was to hold Maram for sometime but the speed and weight of the attack which developed took the Japanese by surprise, and Maram was occupied by a battalion of the 5th British Brigade the same day. The 4th British Brigade now took up the advance and on 20 June reached the 'Basha' Area between MS 86½ and MS 87 which the Japanese evacuated in a hurry, leaving large quantities of stores and equipment. The advance continued throughout the next day passing Karong (MS 92 area) and by the evening reached MS 97. The 4th British Brigade was instructed to consolidate the positions at Karong and the advance was to be taken up by the 6th British Brigade on the following day. This brigade commenced the advance at first light on 22 June. After brushing aside scattered Japanese resistance the troops contacted the advance elements of the 5th Indian Division at 1030 hours on 22 June. The Manipur-Imphal Road was now open and all organised Japanese resistance in this sector had ceased.

Medical Cover in Forward Area

The forward medical cover up to the capture of the Aradura Spur has already been described. In the advance that immediately followed, the casualties continued to be evacuated to the MDS 6 British and 44 Indian Field Ambulances located on the hospital spur in Kohima area. After 8 June when the divisions commenced their advance along different axes it became evident that MDSs would have to be moved forward. 5 British Field Ambulance moved to Kugwema (MS 54 Imphal Road) and opened a MDS there in a site formerly occupied by an IGH. Though accommodation was available it was badly battered and the MDS had to be set up under difficult conditions. However the MDS was fully established within twenty-four hours and two surgical teams commenced to work with the MDS. A special ward (70 beds) was also established to receive dysentery cases which was now on the increase. Conditions at Chakabama where a coy of 54 Indian Field Ambulance established an ADS for the 7th Indian Division were if anything even worse. Only tented accommodation was available but it was decided to build up the site to establish an MDS as early as possible. A surgical team from 26 British CCS was attached to this ADS for all forward

surgical work. But the advancing troops had little contact with the Japanese forces at this stage and casualties were not heavy. Evacuation from Chakabama was to Kohima about 12 miles away along a fearsome track very rough in places. It was possible only to use jeep ambulances along this route. Casualties of the 23rd LRP Brigade were also evacuated through this route by the 7th Indian Division.

With the advance progressing swiftly, advanced medical units also perforce had to keep pace. After the capture of Viscerma it was decided to move forward MDS 5 British Field Ambulance but it was not possible to relieve this detachment immediately and so an elaborate ADS (4 British Field Ambulance) and a surgical team were established at Khuzame (MS 62 Imphal Road) to receive casualties and stage them to the rear. By 12 June HQ 54 Indian Field Ambulance established a MDS at Chakabama. The ADS was moved forward to Kekrima two days later but the surgical team continued to function at Chakabama. The line of evacuation was still along the track mentioned above to Kohima. The capture of Mao Songsang and Tuphema resulted in the linking up of the 5th British and 7th Indian Divisions and evacuation was now switched on along the axis of the 2nd British Division. Consequently the MDS and Surgical team at Chakabama became superfluous and were closed for withdrawal.

Meanwhile 6 British Field Ambulance established an ADS at Mao Songsang for receiving casualties from the fast advancing troops. On 19 June, 44 Indian Field Ambulance opened a MDS at Tuphema to receive casualties from the 7th Indian Division. The major engagements of this division had been completed but the troops were still in contact with Japanese forces. The lay out of forward medical units on 20 June was as follows:—

MDS 44 Ind Fd Amb	Tuphema (dealing with the casualties of the 7th Ind Div operating along the Tuphema-Kharsom track).
MDS 5 Br Fd Amb	Kigwema (To be relieved).
Composite Dressing Station (4 and 6 Br Fd Ambs and Surgical team)	64 MS Imphal Road
ADS 6 Br Fd Amb	Mao Songsang
ADS 5 Br Fd Amb	77 MS
HQ 4 Br Fd Amb	Maram (to open MDS).

These arrangements remained in force until the Imphal Road was opened on 22 June.

Medical Arrangements in the Corps Area

The capture of the Aradura Spur and the Naga village removed the last threats to the security of Kohima, and it was decided to develop the town again into a forward medical base despite the fact that considerable destruction had taken place. The intention was to move 13 CCS then opening up in MS 31 and 8 MFTU to Kohima. 16 Indian CCS which had come under command of the XXXIII Corps was to be

moved to Kigwema about ten miles south of Kohima. A long delay ensued in executing this plan as considerable amount of fresh constructions and repairs had to be undertaken and engineering services had very heavy demands on them. It was anticipated that ultimately the following units would be stationed in Kohima:—

- (a) 13 CCS, (b) 8 MFTU, (c) 44 Indian Anti-malaria Unit, (d) 19 Field Hygiene Section and (e) 3 American Field Service (Ambulances).

These dispositions were only completed slightly before the opening of the Imphal Road and in the interval the field ambulances were responsible for treatment of casualties in Kohima.

Evacuation to the rear from Kohima was organised as follows:—

67 ISS took over from 13 CCS the site at MS 31 for staging casualties to the rear. Ambulances of the No 4 American Field Service were also moved up to this location. The psychiatric centre located at Priphema (MS 28) was retained in the same place to receive psychiatric casualties. 76 ISS and one ambulance section were located at Ghaspani (MS 18). The two ISSs staged the casualties received from the forward areas to the hospitals located in the Dimapur area.

On 18 June, the 21st Indian Division took over the L of C area to the north and east of Kohima and the ADMS of the division became the SEMO of the L of C. This arrangement was very satisfactory as a lot of administrative work was now taken over by the division. By 20 June, 13 CCS commenced functioning at Kohima with one surgical team. However arrangements were not completed and the CCS was instructed to evacuate the casualties in excess of its minimum holding capacity to Manipur Road for the time being. However in view of the improved conditions of evacuation it was decided not to hold any large number of casualties in the forward areas. Of late a tendency had arisen for MDSs to be converted into holding hospitals on a fairly large scale. This was due to the desire to prevent undue wastage and the long line of evacuation to the rear. The development of forward surgery also necessitated the holding of an increasing number of casualties at the MDS until fit for evacuation. With the development of Kohima as a CCS and MFTU centre and increased facilities for safe evacuation, holding of a large number of cases at the MDS level was no longer necessary. It was therefore decided that holding of casualties for any period in excess of 74 hours would be discouraged. Patients on whom life saving surgery was performed were to be retained until fit for evacuation.

The operations of XXXIII Corps, during the period April to June 1944, were conducted in almost formidable terrain rendered more difficult by monsoon. Throughout the operations the most trying conditions of terrain, weather and distance were overcome by sheer persistence of the forward units. In the peculiar circumstances of the operation the most important feature to be kept in view was that forward holding and treatment saves lives whereas evacuation costs lives. This was in

fact the most important lesson of these difficult but extraordinary interesting operations.

Sick and Battle Casualties

An indication of the casualties with which the medical services of the corps were called upon to deal, between April and June 1944, is available from the following figures:—

TABLE

Average Strength of Corps	Admissions Medical Units	Deaths	Average Daily Rate per thousand
36,302	10,733	849	3.48

During the period under review 10,733 cases were evacuated beyond RAP

	British ..	6,317		
	Indian ..	4,416		
		<u>10,733</u>		
	British	Indian	Total	
Battle casualties ..	2,825	1,213	4,038	
Sickness ..	3,492	3,203	6,695	
	<u>6,317</u>	<u>4,416</u>	<u>10,733</u>	

BATTLE AND AIR RAID CASUALTIES—ANALYSIS

	British	Indian	Total
Bayonet wounds ..	4	2	6
Blast Injuries ..	13	..	13
Bomb Wounds ..	358	265	623
Cordite Burns ..	17	8	25
Grenade Wounds ..	339	112	451
Gunshot Wounds ..	681	313	994
Mortar Wounds ..	149	76	225
Phosphorus Burns ..	17	4	21
Pistol Wounds ..	6	..	6
Psychiatric cases ..	181	..	181
Shell Wounds ..	648	323	971
Shrapnel Wounds ..	92	11	103
Sten Wounds ..	12	8	20
Air and Others ..	308	91	399
	<u>2,825</u>	<u>1,213</u>	<u>4,038</u>

Major Causes Sickness

	British	Indian	Total
Malaria and NYD Fever	1,649	1,783	3,432 (a)
Dysentery and Diarrhoea	1,117	746	1,863 (b)
Venereal Diseases ..	109	91	200
Totals	2,875	2,620	5,495
Minor causes sickness ..	617	583	1,200
Sickness Total ..	3,492	3,203	6,695

(a) Of 3,432 cases of Malaria and NYD Fever 1,713 were proved cases of malaria.

(b) Approximately 42 per cent cases of Dysentery and Diarrhoea were proved Dysentery cases.

Amoebic: Bacillary—Approx 42:100.

Diseases affecting Troops

The two diseases that caused the largest number of casualties after the capture of Kohima were malaria and dysentery. The former caused considerably less casualties than the former as the intensely malarious tract after Kohima commenced only for MS 82 Imphal Road and operations beyond this point were concluded speedily. The rigorous anti-malarial discipline then enforced considerably helped in keeping the incidence well within limits. In the case of dysentery, however, the circumstances were different. Normal sanitation standards were found to lapse in battle conditions and this was aggravated by the monsoon conditions in which the troops were operating. However a sanitation drive was launched to effect some improvement in the existing conditions. It was appreciated that in forward areas it was not always possible to enforce standard sanitary measures, but the paramount necessity to ensure at least a minimum standard of hygiene and sanitation was impressed on all. The responsibility of the unit commanders, acting on the advice of their medical officers, to take all measures to ensure and safeguard the health of the troops was once again stressed. These measures had some success and towards the close of the operations the incidence of diarrhoea and dysentery had been reduced considerably.

Hygiene

Camp Sites: In the selection of camp sites very little choice was available due to operational exigencies. Medical advice in the matter of selection of camp sites could not be accepted in quite a number of instances. However it was pointed out to the unit commanders that the best site was one on a grassy slope on a fairly high ground.

Latrines: Shallow trench latrines were permitted when the camp was to be occupied for less than three days, otherwise deep trench latrines were to be constructed. These were to be 12 to 14 feet in depth and were to be closed down when contents came to within two feet from the top with the usual precautions against fly breeding. Bore-hole latrines were to be used wherever the terrain permitted their construction. Dry refuse was to be incinerated and, where this was not possible, it was to be buried deep taking all precautions against fly breeding.

Water: Ample supply of water was available but its transport and purification presented some difficulties. A daily issue of one gallon of water per man was considered ample for cooking and drinking purposes. For other purposes 15 gallons per day were taken to be the outside limit. All supplies of drinking water were to be purified under medical supervision at the source, if that was possible. Water on no account was to be consumed unless approved by medical authorities, and drinking water from unauthorised sources was strictly forbidden. The possibility of water having been intentionally poisoned was to be kept in mind and wherever such suspicion existed medical authorities were to be called to examine the supplies. All vehicles and receptacles for the carriage and storage of water were to be kept scrupulously clean and periodically inspected.

General Health: Every care was to be devoted to the care of the men's feet which were to be inspected daily. It was to be ensured that boots of the correct fitting were to be issued and every man provided with an extra issue of one pair of socks. Jungle sores were to be attended to promptly.

CHAPTER XXIII

The Beginning of Allied Offensive

On 22 June 1944, the Imphal-Kohima road was re-opened. This was the first decisive victory that the Allied forces gained in the Burma Campaign. The battle was won, but the fighting was not over.

Fourteenth Army had been set three tasks, to re-establish communication between Kohima and Imphal, to clear the Dimapur-Imphal Plain-Yuma-Tamanthi area of Japanese, and to advance across the Chindwin between Yuma and Tamanthi. The first of these had been successfully completed as mentioned earlier, and attention could now be paid to the remaining two.

General Slim allotted to XXXIII Corps, the task of clearing the area north of the line Kangpokpi-Ukhrul and to IV Corps that of clearing the area to the south and west of this.

Operations in the Ukhrul Sector

On 24 June, the 33rd Indian Infantry Brigade (7th Indian Division) moved from the Kohima area to Maram with a view to advance on Ukhrul from the north-west by a track which passed through Oinam-Ngawar to Ukhrul. The 89th Indian Infantry Brigade of the same division which had just reverted from the 5th Indian Division was concentrated in the Kangpokpi area on the Dimapur-Imphal road. This brigade was to advance to Ukhrul by a southern track through Chawai, Mollen, Leisban and Luinem. Both the brigades were to be on a mule pack basis, and supplied by air, as even jeeps could not negotiate these tracks. The advance on both these tracks commenced on 27 June, and made good progress in spite of the bad rainy weather, which greatly handicapped not only the marching, but also the air supply. It was assumed that the Japanese would not be expecting any attack from these directions owing to the difficulty of approach, and this was proved to be correct, as no organised opposition was met with till Ukhrul was almost reached. Meanwhile the 23rd Long Range Penetration Brigade was advancing from the north on Ukhrul to attack it from the east. It was repeating its usual tactics of cutting the Japanese retreat to the east of the river Chindwin. Contact was established with this brigade on 2 July and plans were co-ordinated for an attack on Ukhrul. On 3 July the advanced elements of the 89th Brigade unexpectedly burst into the southern outskirts of Ukhrul before they were checked. Severe fighting ensued, for the capture of Ukhrul. Even though troops entered this village on 5 July, fighting continued to the south and west of it, where the Japanese held strongly fortified positions. It was not until 8 July that the whole of Ukhrul itself was finally cleared of Japanese forces.

The next task was that of re-opening the Ukhrul-Imphal road. In the original plan for the capture of Ukhrul, the brigades of the 20th Indian Division were to co-operate tactically with the 89th Indian Infantry Brigade and the 33rd Indian Infantry Brigade in the final assault.

By 22 June, the 100th Brigade of the 20th Division had reached, and had been held up in the "Saddle area", a feature to the south-west of Litan on the Imphal-Ukhrul Road. At this time the 80th Brigade of the same division had reached above the bend of the Iril river near Chawai and Mollen. On June 23, the 80th Indian Infantry Brigade was instructed to move to the area of Khuntak, and on arrival of the 89th Brigade of the 7th Indian Division there, move south, and threaten the rear of the Japanese units around Litan so as to facilitate the advance of the 100th Brigade up the Ukhrul road.

The 80th Brigade reached the vicinity of Khuntak on June 26 and the place was occupied on the following day, when the 33rd and 89th Indian Infantry Brigades started their advance from Maram and Kangpokpi. Meanwhile, the 100th Brigade was attacked by a strong Japanese force, and was obliged to vacate certain of its positions. The fighting continued for many days, and by 10 July, the Japanese resistance was finally overcome, and the road re-opened.

Mopping up beyond Ukhrul

Although Ukhrul was recaptured, and the road from Imphal had also been opened, there were reports of scattered Japanese parties still fighting. About 400 of them were facing the attacks of the 2nd British Division in the Shorbung area. Others held position within the bend of the Iril river around Pashong and Dongshum, and in the vicinity of the Saddle, Aishan and Thawai. To capture or destroy these Japanese troops, operations had begun before the fall of Ukhrul. The 2nd British Division and the 20th Indian Division moved against them in such a way that they were driven against the 23rd Long Range Penetration Brigade and the 33rd Indian Infantry Brigade which stood across the Japanese escape routes. On 2 and 3 July, orders were issued by XXXIII Corps defining the operations to be undertaken after the capture of Ukhrul. The 23rd Brigade was to send two columns to the Ukhrul area, and co-operate with the 89th Indian Infantry Brigade in intercepting and destroying the Japanese troops trying to retreat from the Shorbung area. The rest of the Brigade was to swing in a wide area and cut the south-east escape route at Chattrik and Ongshim. The 33rd Brigade was to march south-west from Ukhrul and assist the 20th Indian Division, while the 89th Indian Infantry Brigade advanced and took up positions on the Lungshong-Kamjong track and in the area of Leiting and Phalang. These operations were carried out in the most difficult conditions. The hills were perpetually enveloped by the clouds and mist, and as such supply dropping from the air was not possible. It was therefore, decided to use jeeps for supplying the forward units, but even these could not be utilised as the track was full of thick slippery mud. Under these circumstances, therefore, a complete net could not be drawn around the retreating Japanese, and most of them slipped out to reach the Chindwin in safety.

When it had become clear that these efforts did not meet with success, it was decided to discontinue them. The 89th Brigade began to move back to Kohima on 22 July via Imphal, and by 28 July, the

33rd Brigade reached Zubza near Kohima. The 7th Indian Division was then assembled at Kohima, and entered upon a period of rest, refit and training. The 4th Brigade of the 2nd British Division relieved this tired force, and assumed responsibility for the defence of the Ukhrul area. In the meantime units of the 20th Indian Division had completed its task of mopping up in the area between Aishan and Sangshak, and began to move to Thoubal; its 80th Brigade going to Wangjing, and its 100th Brigade to Waithu. The 50th Indian Parachute Brigade assumed control of the area thus vacated by the 20th Indian Division for the time-being.

Thus, the Japanese were hurled back and thrown out of the large area of hills and forests between the Dimapur-Imphal road and the Chindwin river, with the exception of a salient across the river in the vicinity of Palel.

Medical Cover

With the 33rd Indian Infantry Brigade during its advance to Ukhrul from Maram (MS 80 Kohima-Imphal road) went a reinforced ADS of the 44 Indian Field Ambulance to which was attached an improvised surgical team and a squad of stretcher bearers from the 5th Indian Bearer Company. The MDS of this field ambulance was functioning at Kohima. The equipment of ADS was carried by twenty mules, while that of the surgical team by another five. The personal kit and equipment of the men had been strictly limited. It was considered impracticable to evacuate casualties rearwards as the track was very difficult to negotiate, and therefore they had to be carried forward to Ukhrul.

The brigade advanced in three columns, each column being provided with a detachment of the ADS. The improvised surgical team accompanied the rearmost of these detachments. The first day's march was very long and dry, and those falling sick were evacuated to the MDS of 54 Indian Field Ambulance in Maram. In addition to the stretcher bearers, Naga porters were engaged from village to village to carry the lying cases. The weather deteriorated and rain fell continuously. On 4 July, the brigade opened its assault on Ukhrul, and the ADS remained a few miles from this town until it had been captured. In the last stages of the march towards Ukhrul, the Naga porters became difficult to manage and refused to carry patients towards an area held by the Japanese forces. By 8 July, the ADS was holding about 100 patients, most of them suffering from mild illnesses. The surgical team also opened up near the ADS and did a lot of good work.

With the 89th Indian Infantry Brigade, on its advance to Ukhrul from Kanpoli, went an ADS of 66 Indian Field Ambulance, and 14 Mobile Surgical Unit. Naga porters were engaged as stretcher bearers. The MDS of this field ambulance was functioning in Kangpokpi. In this advance also, the casualties were carried forward. On 3 July, as the brigades of the 7th Indian Division were approaching Ukhrul, the Headquarters of the Division moved to MS 10, Imphal-Ukhrul road.

With it went a light MDS of 66 Indian Field Ambulance, which opened at this site.

After the capture of Ukhrul, on 8 July, the 33rd Indian Infantry Brigade pushed on to the south-east, while the 89th Indian Infantry Brigade turned South to join up with the 20th Indian Division on the main Imphal-Ukhrul road. The ADS of 54 Field Ambulance which followed the advance of the Brigade, handed over its patients to the ADS of 66 Indian Field Ambulance in Ukhrul and moved with this brigade. Owing to continuous rain and mud, however, it was not possible for the ADS to move beyond Lungshong. Evacuation from the brigade to the ADS was carried out by Naga porters, a journey that took as long as two days.

With the 23rd Long Range Penetration Brigade went an ADS of 9 Indian Light Field Ambulance, which opened at MS 30 on the Kohima-Jessami track and functioned as a staging post. A total of 77 casualties passed through this ADS from the brigade, but of these only a few were battle casualties, the great majority suffering from fever, avitaminosis and general exhaustion.

To begin with evacuation of casualties from this ADS was carried out by the light aircraft of the U.S.A.A.F., but as the advance progressed to the south, evacuation by aircraft became difficult and arrangements were made to carry the casualties forward to Ukhrul.

A very severe outbreak of mite typhus occurred in this brigade with an unusually high mortality rate, due, no doubt, to their weakened and unavoidably under-nourished condition.

By the end of July, both 33rd and 89th Brigades of 7th Indian Infantry Division were withdrawn for rest, the medical detachments joined their parent units. The area was taken over by 4th Brigade of 2nd British Division which was accompanied by an ADS from 4 British Field Ambulance. This field ambulance established an MDS at Maram.

The Capture of Tamu

When Kohima-Imphal Road was being opened Japanese forces consisting of 15th and 33rd Divisions made an attempt to reach Imphal along the Tamu-Palel road, but were held up in the area of Tengenoupal by the 23rd Indian Infantry Division, comprising the 1st, 37th and 49th Indian Infantry Brigades. The 37th Brigade with its Headquarters at Shenam, was battling in the Tengenoupal area and along the main road, and was thus bearing the brunt of Japanese attacks in their attempt to break through. The 1st Brigade had established itself in the area of Kaching, guarding the road from Tengenoupal to Imphal in the area of Thoubal. The third brigade of this division, 49th Indian Infantry Brigade had its Headquarters in Heirok and was given the task of preventing any Japanese infiltration between the positions held by the 23rd Indian Infantry Division on the Palel road, and the 20th Indian Infantry Division on the Ukhrul road. On 14 July, the 23rd Indian Infantry Division was reinforced by 5th Infantry Brigade of the 2nd British Division, the 268th Indian Infantry Brigade, and a number of armoured, artillery, engineer, machine gun and pioneer units.

The Japanese were actively probing the positions held by the 23rd Indian Infantry Division and had succeeded in seizing a prominent hill feature about three miles from palel itself. Several days of fierce fighting with much artillery and air support were required before the Japanese could be dislodged from this feature.

Patrolling was now intensified by the 23rd Indian Infantry Division since it seemed probable that the Japanese would shortly be forced to withdraw eastwards and preparations were made for the pursuit and destruction of the Japanese should they withdraw. It was also decided to destroy the two bridges over the Lohchao stream near Tamu to prevent the escape of the retreating Japanese and then by a frontal attack annihilate them. On 17 July, plan for an attack was issued. Two squadrons of RAF Hurricane bombers were to provide air support. The 268th Indian Infantry Brigade was to protect the line of communication of the 49th Indian Infantry Brigade from Japanese attacks, and to maintain the Nungtak track in a fit state of repair. In addition it was required to prevent the Japanese escape, then in the Khudei Khulen area eastwards. The 37th Indian Infantry Brigade in the centre and supported by all the Corps artillery and a number of tanks, was to assault the Japanese positions at Lachao. The 1st Indian Infantry Brigade was to advance north-eastwards along a jeep track leading to Chamol and attack the Japanese right flank. The 49th Indian Infantry Brigade was to make a wide turning movement through the hills to cut the main Tamu-Imphal road, about ten miles behind the Japanese positions. The 5th British Brigade was placed immediately behind the 37th Indian Infantry Brigade on the main road to exploit the success of this brigade or reinforce it if necessary. Owing to incessant rains, the date for the attack had to be postponed twice and was not launched till 24 July. However, four days earlier, on 20 July, while the attacks of the 1st and 37th Brigades were still held up by the continuous rain, the 49th Brigade commenced its out-flanking march through the hills to reach Sitan the following day, Leibi on the 22nd, and Sibong on the 23rd. During the night of 22/23 July the rest of the division advanced and found that the brigades over Lokchao river were heavily defended. Attempts to destroy the bridges were unsuccessful and torrential rain added to the difficulties. It was, therefore, decided to revert to the alternative of establishing road block. Severe fighting took place while attempts to construct the road block were made. The road to Tamu, for a long stretch, was under fire from Allied positions on features overlooking the road. This temporary re-opening of the road enabled the Japanese to withdraw, and while doing so they demolished the bridges over the Lohchao river. Meanwhile, the attacks of the 1st Indian Infantry Brigade and the 37th Indian Infantry Brigade to its right progressed satisfactorily aided by air attacks. This forced the Japanese in a head-line retreat and the road to Tamu and the river Chindwin lay open. Tamu was entered by the 5th Brigade on 4 August. A ghastly scene greeted the victors as they marched into the town. Streets were deserted, and the air was heavy with the stench of the decomposing bodies. The dead lay every where. They sprawled on the streets, lay on the floor in every hut and hamlet, sat at the steering wheel of

motionless lorries. But more miserable were the living dead, the starving, wounded and sick who had received no medical attention. The damp, steamy heat, the slimy mud and the million of flies completed the picture. There was but only one means of cleaning this small border town, by purging it with fire. During the advance of the 23rd Indian Division, it became possible to appreciate the magnitude of the defeat which the Japanese had suffered in this section.

By the time Tamu had fallen, the 23rd Indian Infantry Division had been fighting continuously for over six months. The troops were worn out and badly in need of a period of rest and rehabilitation. It was relieved by 11th East African Division and moved back to the Shillong area.

As the troops of the 23rd Indian Infantry Division left the scene of their bitter struggle, fresh troops of the 11th East African Division started on their advance to Sittang and down the Kabaw Valley to Kalembo.

Medical Cover

With the 23rd Indian Infantry Division the following medical units were attached:—

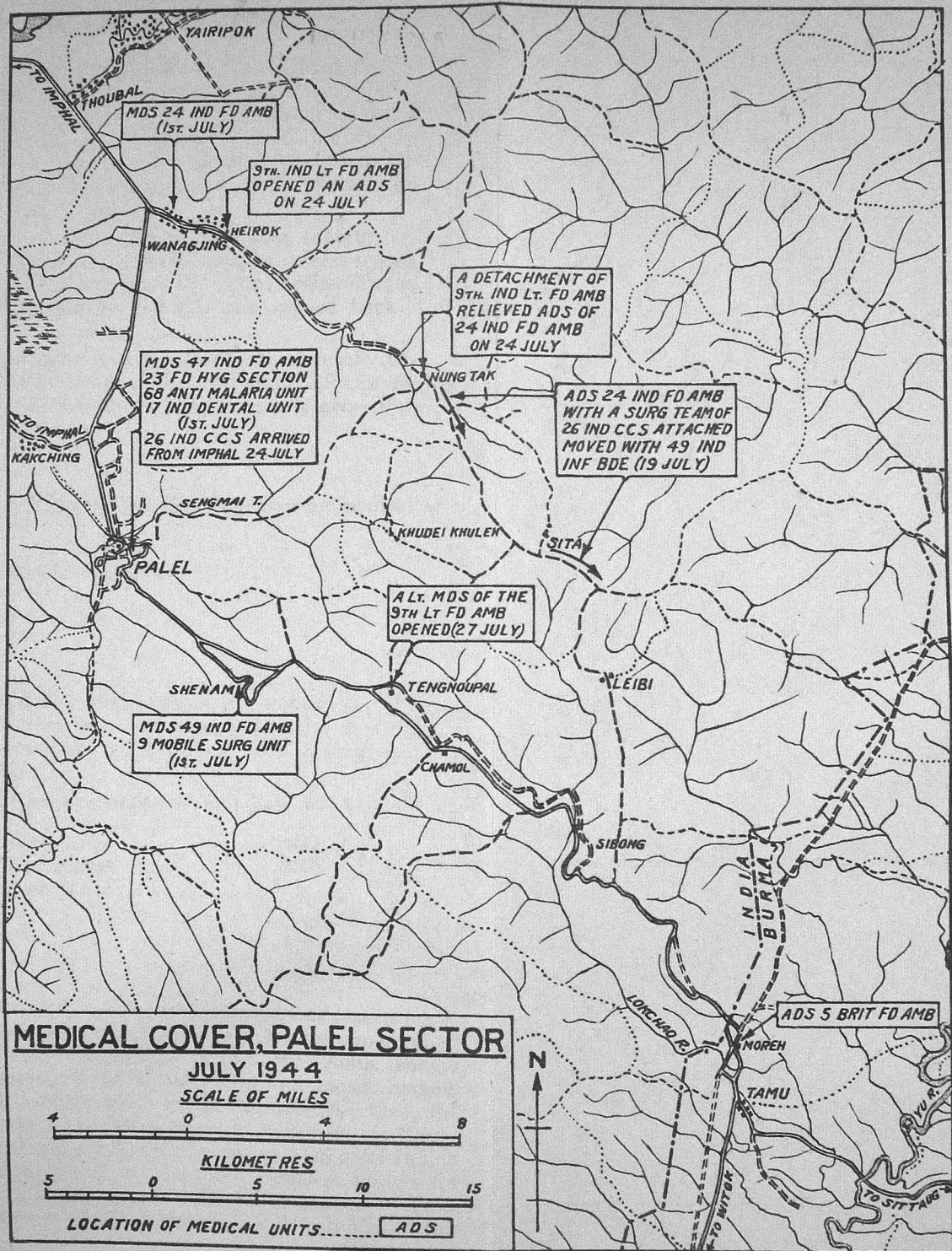
24, 47 and 49 Indian Field Ambulances
9 Mobile Surgical Unit
17 Indian Dental Unit
23 Field Hygiene Section
68 Anti-malaria Unit.

In addition, 7 and 10 Indian Field Ambulance troops were attached to the division for carriage of sick and wounded. Also a section of American Field Service consisting of jeeps and jeep ambulances was working with the division.

The location of these medical units as on 1 July was as under:—

MDS 24 Indian Field Ambulance	..	..	Wanjing
MDS 47 Indian Field Ambulance	..	..	Palel
MDS 49 Indian Field Ambulance	..	..	Shenan
9 Mobile Surgical Unit	..	..	Shenam
23 Field Hygiene Section	..	..	Palel
68 Anti-Malaria Unit	..	..	Palel
17 Indian Dental Unit	..	..	Palel.

When the 5th Brigade of the 2nd British Division was placed under Command of the 23rd Indian Infantry Division, it was accompanied by an ADS of the 5 British Field Ambulance; whilst the 268th Indian Infantry Brigade was accompanied by its own field ambulance, namely the 9 Indian Light Field Ambulance. When on 19 July 1944, the 49th Indian Infantry Brigade made an out-flanking movement via Nungtak-Sita-Sibong, the medical cover was provided by an ADS of 24 Indian Field Ambulance along with about one hundred Nepalese porters for the carriage of patients. 9 Indian Light Ambulance arrived in Palel area on 24 July, and opened an ADS at Heirok. A detachment of this



field ambulance moved to Nungtak on the eve of the out-flanking operations of the 49th Indian Infantry Brigade and relieved ADS of 24 Indian Field Ambulance, functioning there in order to enable the latter to move with the 49th Indian Infantry Brigade. Evacuation from the Sita-Nungtak area was by hand carriage to Sengmai. When the division passed through the 49th Indian Infantry Brigade at Sibong, a light MDS of 9 Light Field Ambulance moved from Heirok on 27 July and opened in Tenguoupal at mile stone 44 on the Imphal-Tamu road. The ADS of 24 Indian Field Ambulance with the 49th Indian Infantry Brigade did extremely good work. In addition to evacuation of casualties, this ADS held over a hundred patients on an average, including many severe battle casualties. A surgical team from 26 Indian CCS was attached to this ADS and remained with it during the move of the ADS with the brigade. The attachment of the surgical team proved undoubtedly a life saving measure. The ADS of 5 British Field Ambulance was established at Moreh to serve the forward elements of the 49th Indian Infantry Brigade. After the capture of Tamu and the relief of the 23rd Indian Infantry Division by the 11th East African Division, the MDS of 9 Indian Light Field Ambulance at mile stone 44 rejoined its parent unit in Heirok. 26 Indian CCS was moved from Imphal to Palel on 28 July to provide additional cover for the 23rd Indian Infantry Division and opened at the site of 47 Indian Field Ambulance, where it now opened to receive the casualties from the forward area.

The pursuit to Tiddim and Kalembo

Earlier by 22 June, when communication between Imphal and Kohima was re-established, Japanese efforts, to reach Imphal plain, had been largely foiled by the 17th Indian Infantry Division in the Southern sector. This division had under its command the 48th and 63rd Indian Infantry Brigades and the 32nd Indian Infantry Brigade of the 20th Indian Infantry Division. The 32nd Brigade was engaged in clearing the Japanese positions along the Silchar track, while the 63rd Brigade was operating in the hills to the north of the track. The 48th Brigade was holding positions on the main Bishenpur-Imphal road with its forward elements at Potsanbam and Ningthoukhong. During early July, the 5th Indian Infantry Division was instructed to take over the defence of Bishenpur-Silchar section in order to free the 17th Division for a major thrust, to the south. The 32nd Brigade was relieved and moved back to join its parent unit.

On 11 July, the 48th Indian Infantry Brigade was ordered to advance along the main Tiddim road from Potsanbam and capture the villages of Ningthoukhong, and Kha-Khunon near milestone 21 and thereafter press on to Thinunggei village, a mile or so further to the south. At the same time the 63rd Brigade was instructed to move south from the Silchar track.

Heavy fighting took place, and Ningthoukhong and Kha-Khumon were finally captured on 15/16 July. The Japanese withdrew leaving behind tanks, guns in large quantities and many dead. Following these

operations, the 48th Indian Infantry Brigade was withdrawn, and replaced by the 63rd Indian Infantry Brigade which took up the pursuit and reached milestone 25 on the Imphal-Tiddim road on 18 July. On this day, the 5th Indian Infantry Division assumed control of operations in this section. Nevertheless, the 63rd Indian Infantry Brigade was instructed to continue its advance under command of this division. It did so until 22 July, when it reverted to the command of the 17th Indian Infantry Division and the 161st Indian Infantry Brigade of 5th Indian Infantry Division took up the pursuit to Tiddim. On July 18, the 5th Indian Division moved to Beri-Bazar where its 9th Brigade was concentrated. Its 123rd Brigade moved on to the Imphal-Tiddim road to pass through the 161st Brigade and capture Moirang on 19 July. This was followed by the 9th Brigade which advanced to Lumka on 25 July and captured Churachandpur, the same day. On the last day of July XXXIII Indian Corps took over operational control from IV Corps which moved back to India for a brief rest.

To the command of XXXIII Corps passed the 5th and 17th Indian Divisions and a fortnight later the Lushai Brigade. The latter was originally mobilized from Indian troops and some local Levies to prevent the Japanese infiltration into the Lushai Hills. The Corps now included no less than five divisions, two infantry brigades and a tank brigade.

At this time, the 2nd British Division was resting in the Maram area with its 4th Brigade near Ukhrul, and its 5th Brigade near Sibong. The 5th Indian Infantry Division had begun its advance down the Tiddim road, and its forward elements had reached milestone 41 on 31 July. The 7th Indian Infantry Division was resting in the Kohima area.

The 11th East African Division was moving forward to take over from the 23rd Indian Infantry Division and to continue the advance to Kalembo through the Kabaw Valley. The 23rd Indian Infantry Division, which had been advancing down the Tamu road, was approaching Tamu.

Lushai Brigade was operating from bases in the Lungleh-Champai area against the Imphal-Tiddim road.

XXXIII Corps was instructed to:—

- (a) pursue the Japanese with not less than one infantry brigade group on each of the following axes:—
 - (i) Imphal-Tiddim-Kalembo-Kalewa
 - (ii) Tamu-Indaingyi-Kalewa
 - (iii) Tamu-Sittang
- (b) occupy Sittang and deny the use of the Chindwin river to the Japanese
- (c) seize Kalewa if a favourable opportunity presented itself so that a bridgehead across the Chindwin might be established later on.

The instructions for this operation were issued on 7 August. The intention was to destroy all Japanese forces on the west bank of the Chindwin river from Tamanthi to Kalewa and to secure the important

crossings over the Myittha and Chindwin rivers at Kalemmyo and Kalewa, respectively. The 5th Indian Infantry Division was ordered to move at the maximum speed down the Tiddim road to catch up with the retreating Japanese. The 11th East African Division was instructed to secure Sittang with one brigade group to establish a company of infantry in Kuntaung and in Mintha to protect the northern flank of Tamu-Sittang road and then advance down the Kabaw valley to secure Kalemmyo. The 3rd Brigade of this division was kept on the Palel-Tamu road pending further instructions from the Corps. The 7th, 17th and 20th Indian Infantry Divisions were ordered to carry out intensive patrolling and destroy all Japanese troops within their respective divisional boundaries.

Pursuit to the Burma border

The 5th Indian Division whose forward elements had reached milestone 41 on the Tiddim road by 3 July, continued its advance down the road maintaining a steady pressure combined with a number of hooks round the flanks of the retreating Japanese troops. By 4 August the division had reached milestone 50 and its 9th Brigade went into the lead. By the 8th, this brigade had reached milestone 55½, by the 15th milestone 67, by the 21st milestone 75, just inside Burma; and by the 23rd milestone 84. The brigade had averaged two miles a day in the very worst kind of weather and against severe Japanese opposition. The 161st Indian Infantry Brigade then relieved 9th Indian Infantry Brigade and took up the advance to Tiddim on 23 August. This brigade reached milestone 84 before encountering any opposition. On 25 August, fighting momentarily flared up but the Japanese were evicted from their positions. Meanwhile, a detachment of the 161st Indian Infantry Brigade moved through the hills to the east of the road in an attempt to get behind the Japanese positions and cut the road to milestone 90. The road was cut but the Japanese held on to their positions between milestones 86 and 90. These were heavily bombed, and on 27/28 August the Japanese withdrew and the 161st Brigade moved forward to join up with the detachment at the road block. By 31 August, the leading elements of the brigade had reached a series of defended positions extending from milestone 100 to milestone 109. In all these encounters, it was noticed that the fanatical resistance which the Japanese troops always displayed was lacking considerably.

By 4 September, milestone 105 had been reached, by the 9th, milestone 117 and by the 13th milestone 121, from where the Manipur river crossing could be seen. On the following day, the major part of the brigade had concentrated on the bank of the Manipur river, which was found to be in full flood. The bridge across this river had been demolished long ago during the withdrawal of the 17th Indian Infantry Division from Tiddim to Imphal during the Japanese assault on the Imphal plain. Since the river presented a formidable obstacle, a wide outflanking movement by the 123rd Indian Infantry Brigade was planned. By 14 September, it had seized the high ground south-east of Towzang and opposite the point at which the rest of the division would strike the river at milestone 126. The Japanese quickly withdrew

from the river line. By 15 September, both brigades of the 5th Indian Division had reached the opposite banks of the Manipur river. Frantic efforts were made to bridge the river, and with a great difficulty a ferry was contracted across the raging torrent the next day and the troops began to cross over. The Japanese were however, found to hold strong positions in Tonzang. Attacks on it were unsuccessful as the Japanese were fighting back with determination. However, on 20/21 September, the Japanese evacuated the place and it was occupied the following day. Meanwhile, the 161st Brigade was ferrying across the Manipur river and by 23 September, the whole division had concentrated on its either banks.

The main task of the 5th Indian Division still remained the capture of Kalemmyo. It was now decided that the 123rd Indian Infantry Brigade should advance on a wide front and occupy the road from Tiddim to Vital Corner, while the other two brigades maintained a firm base for the division in the area between the river crossing and Tonzang. The engineering resources of the 14th Army did not permit the advance along two axes, namely, the Imphal-Tiddim and the Imphal-Tamu roads, and so it was decided to abandon the Tiddim road as a line of communication and to allow it to deteriorate after the 5th Division had passed. Since the Tiddim road was allowed to deteriorate, evacuation along it would become difficult, and casualties would have to be carried either forward or else 'nested' in villages. General Slim asked for a few nurses to accompany this division on its advance down the Tiddim road. Many volunteered; but only a few were selected. Their presence made a great contribution to raise the morale of the division.

By 23 September, the troops of the 123rd Indian Infantry Brigade reached milestone 143, without meeting any opposition. On the following day, the area between milestone 146 and 147 was reached without much opposition and the same day the Divisional Headquarters also crossed the Manipur river and moved forward.

The brigade then crossed river Beltang Lui on 29 September, and reached the famous 'Chocolate Staircase', a name given to the numerous tiers of the road from Beltang Lui to Tiddim, as it climbed to a height of 3,000 feet in seven miles. There were 38 hair pin bends within this stretch of road. The road was unmetalled and was reduced to ankle deep mud by the traffic and monsoons. The Japanese positions at the entrance to the 'Chocolate staircase' were heavily fortified. These positions were rendered ineffective by short hooks and the advance continued. By the evening of 7 October, the road upto milestone 158 was completely cleared.

On 17 October, Tiddim was entered and the Japanese were found to have withdrawn from it. South of Tiddim on the same day, Lushai Brigade entered Falam and two days later, Haka was also entered. The pursuit to Kalemmyo was taken up immediately. On 18 October, the 123rd Brigade reached about two miles south of Tiddim and was nearing Vital Corner and 'Kennedy Peak' which had been fortified by the Japanese.

The 123rd Indian Infantry Brigade was then directed to complete

the occupation of the Vital Corner and the 9th Indian Brigade was to take up the advance along the main road. To overcome the expected resistance at 'Kennedy Peak', the 5th Indian Division made two outflanking movements, one by the 161st Indian Infantry Brigade on the right aimed at the road junction 2 miles to the south of 'Fort White', while the other by a group of battalion strength to strike into Kalemoyo road some 10 miles east of the Fort.

On 25 October, as a result of intensive patrolling, the defensive positions covering 'Vital Corner' were located and were subjected to heavy aerial bombardment. But when the troops of the 123rd Indian Infantry Brigade moved to assault 'Vital Corner', it was strongly repulsed. Meanwhile, the 9th Indian Infantry Brigade, which had been closing up behind, had reached milestone 4 on the Tiddim-Kalemoyo road. There was severe fighting in the neighbourhood of 'Vital Corner' but ultimately on 2 November, the entire area was cleared. The 9th Indian Infantry Brigade following up the retreating Japanese continued the advance and prepared to assault the 'Kennedy Peak', but forward patrols of the 123rd Indian Infantry Brigade discovered that the Peak had been evacuated.

On 3 November, the advancing troops of the 9th Indian Infantry Brigade established a road block at milestone 19, to seal the escape route of the defenders in the 'Kennedy Peak'. But most of them had already left.

Meanwhile, the 161st Indian Infantry Brigade made satisfactory progress in its outflanking movement and reached milestone 34 on 11 November without much opposition. The road to Kalemoyo was now virtually open and on the evening of 13 November, the advanced elements of the 161st Indian Infantry Brigade and the 11th East African Division entered the deserted town of Kalemoyo, almost simultaneously. The total number of casualties suffered by the 5th Indian Division during the remarkable operation was 88 killed, 293 wounded and 22 missing, against about one thousand and five hundred inflicted on the Japanese.

The 5th Indian Division, after cleaning the area of stragglers, was concentrated at Kalemoyo and sent back to Imphal by air and road for rest.

Medical Cover 17th Indian Division

With the 17th Indian Division, while it was serving in the Bishenpur sector, before being relieved by the 5th Indian Division, were 23 and 37 Indian Field Ambulances. In addition, there was 59 Indian Field Ambulance providing medical cover to the 32nd Indian Infantry Brigade (20th Indian Division) and 37 Indian Field Ambulance remained closed. The other field ambulances were distributed as follows:—

ADS 23 Indian Field Ambulance	. in Khoirok
Light MDS 23 Indian Field Ambulance	.. Bishenpur
MDS 23 Indian Field Ambulance	.. Imphal
ADS 59 Indian Field Ambulance	.. at milestone 23 on the Bishenpur-Silchar track.

Lt ADS 59 Indian Field Ambulance	.. at milestone 21 on the Bishenpur-Silchar track.
MDS 59 Indian Field Ambulance	.. in Imphal functioning as a small hospital for the divisional minor sick.

Evacuation from the ADS of 59 Indian Field Ambulance was by jeep ambulance to the Light ADS of this Field Ambulance situated at milestone 21. From this place the jeeps were unable to proceed further, as the track was in full view of the Japanese positions located in the hills on either side. The casualties were, therefore, carried by stretcher bearers along mule tracks for a distance of about two miles to a point where a relay post was established close to the suspension bridge.

From here the casualties were carried to a Car-post across the suspension bridge from where ambulance cars conveyed them to the light MDS of 23 Indian Field Ambulance in Bishenpur. From there they were sent to one or the other of the hospitals in Imphal.

Medical Cover 5th Indian Division

The medical complement of the 5th Indian Division was as follows:—

- (1) 10 Indian Field Ambulance with the 9th Indian Infantry Brigade
- (2) 45 Indian Field Ambulance with the 123rd Indian Infantry Brigade
- (3) 75 Indian Field Ambulance with the 161st Indian Infantry Brigade.

Ancillary Medical Units

- (1) 7 Indian Field Hygiene Section
- (2) 55 Anti-Malaria Unit
- (3) 5 Mobile Surgical Unit.

On 26 July, a company of 45 Indian Field Ambulance moved with the 123rd Indian Infantry Brigade to the southern part of the sector. The 161st Indian Infantry Brigade moved to Buri Bazar on 4 July, and an ADS of 75 Indian Field Ambulance was established at this place. 5 Mobile Surgical Unit was attached to the ADS of 45 Indian Field Ambulance to attend to serious battle casualties.

On 11 July, the 161st Indian Infantry Brigade moved by mule back north of the Silchar track to the west of the Imphal-Tiddim road, and was accompanied by the ADS of 75 Indian Field Ambulance, to which were posted several stretcher-bearer squads attached to the 32nd Indian Infantry Brigade.

On 15 July, the 161st Indian Infantry Brigade relieved the 32nd Indian Infantry Brigade, and the ADS of 75 Indian Field Ambulance took over from the ADS of 59 Indian Field Ambulance. The line of evacuation remained the same as mentioned earlier.

45 Indian Field Ambulance opened its ADS in Bishenpur. From it, evacuation of serious cases was carried out to 41 IGH at Imphal, and minor cases were sent to the MDS 75 Indian Field Ambulance

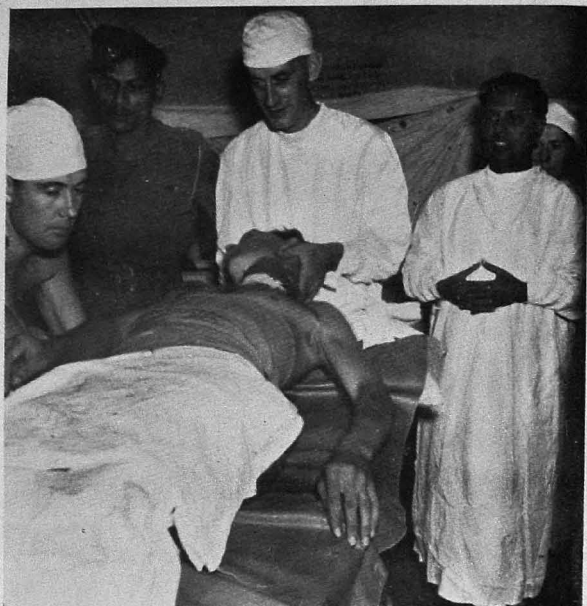


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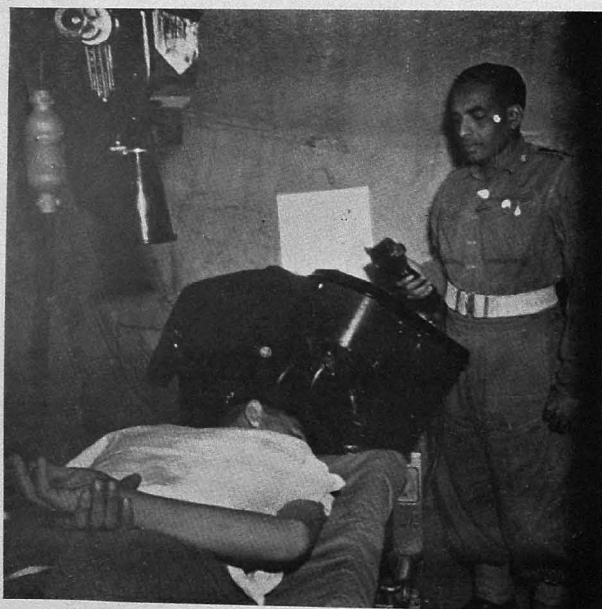
Evacuation of casualties by air from Tiddim, November 1944.

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5th Indian Division Field Surgery at Tiddim, October 1944.



opened at the Burma House in Imphal. On 19 July, after the battle of Ningthoukhong, the 9th Indian Infantry Brigade went into the lead, and HQ 45 Indian Field Ambulance which had been functioning in Imphal moved to the south of Bishenpur near Potangham, and opened its MDS there. The ADS of this Field Ambulance, which was functioning at Bishenpur, also moved down to join the MDS. A mobile surgical unit was attached to this MDS. By 20 July, the area south of Silchar track had been cleared by the 161st Indian Infantry Brigade and it could, therefore, be utilised by the jeep ambulances to run down to the Car post at the suspension bridge. The stretcher-bearers, attached for hand carriage, were sent back to their respective units. With the 9th Indian Infantry Brigade, as it advanced rapidly to the south, went an ADS of 10 Indian Field Ambulance, which opened at milestone 35 on the Imphal-Tiddim road on 1 August. Following the 9th Indian Infantry Brigade closely was the 123rd Indian Infantry Brigade. Its 45 Indian Field Ambulance opened an ADS at milestone 31 on 20 July to serve the brigade. On 5 August, the MDS of 10 Indian Field Ambulance opened at milestone 37 and its ADS at milestone 48. Evacuation was now being organized through MDS of 45 Indian Field Ambulance at milestone 19. By 15 August, this MDS moved to milestone 37 to function as a divisional MDS capable of holding upto 100 patients. As the advance continued, the MDS of 75 Indian Field Ambulance moved up from Imphal to milestone 54. 5 Mobile surgical unit, which was attached to the MDS of 45 Indian Field Ambulance, at milestone 37, was now moved up to join the MDS of 75 Indian Field Ambulance at milestone 54. The line of evacuation had now become considerably extended and additional ambulance cars were provided to cope up with the evacuation of patients. A section of the American Field Service also joined to take part in this work.

As the advance of the 9th Indian Infantry Brigade continued with undiminished speed, the ADS of 10 Indian Field Ambulance moved to milestone 64 and the MDS of 45 Indian Field Ambulance at milestone 37 was now closed and kept ready to move forward.

By this time the divisional medical units had been spread over a long L of C, and the Corps medical units were, therefore, moved forward to relieve them. This enabled the divisional medical units to move to forward locations.

By 21 August, 13 Indian CCS moved from Kohima to milestone 37 on the Imphal-Tiddim road and took over from MDS 45 Indian Field Ambulance.

It was originally planned to place this CCS at milestone 82 where an air strip was available, but transportation difficulties and the adverse wheather conditions made it impossible, and so the unit opened partially at milestone 37. By 26 August, this unit had about 90 beds available, which were mainly utilised for the treatment of Scrub Typhus cases evacuated from forward units. 10 Indian Field Ambulance, meanwhile, opened its MDS at milestone 74 on 21 August. It was intended that the 9th Indian Infantry Brigade would only advance to milestone 42, from where the 123rd Indian Infantry Brigade was to take the lead. But

the unexpected rapid pace of the 9th Indian Infantry Brigade prevented it from doing so, and resulted in the rearrangement of the original plans of the medical set up. By 22 August the 9th Indian Infantry Brigade reached milestone 83 and the 161st Indian Infantry Brigade was concentrated at milestone 54 with a view to pass into the lead when the former reached milestone 83.

The ADS of 75 Indian Field Ambulance with the 161st Indian Infantry Brigade joined the MDS of the same unit at milestone 54. In the meantime, the 123rd Indian Infantry Brigade, which was concentrated at Churachandpur, was assigned the task of a wide hook southwards from Shuganu. 45 Indian Field Ambulance accompanied this brigade. It was assumed that the 161st Indian Infantry Brigade would become involved in a series of out-flanking movements of about three or four days duration and that during these operations, the casualties would have to be carried forward.

The RAP of the battalions were therefore, reinforced with one medical officer and eight to twelve stretcher-bearers provided from the field ambulance. The equipment consisted of medical and surgical panniers, transfusion supplies, and two or three tarpaulins carried on mules. For the transportation of casualties, a number of riding mules were allotted to each unit. Such an arrangement proved to be quite satisfactory.

On 23 August, the 161st Indian Infantry Brigade passed through the 9th Indian Infantry Brigade at milestone 83 and went into the lead. A company of 75 Indian Field Ambulance accompanied the brigade and opened an ADS at milestone 80, with the MDS of the unit still at milestone 54. On 24 August, the MDS of 10 Indian Field Ambulance moved to milestone 80, and two days later to milestone 82. 5 Mobile Surgical Unit from 75 Indian Field Ambulance joined this MDS, and so also the ADS which had been accompanying the 9th Indian Infantry Brigade during its advance. The MDS was shelled resulting in a few casualties. The site was, therefore, dug in well. The evacuation from this MDS was carried out to 13 CCS established at milestone 54 by ambulance cars and returning MT transport of all kinds. Owing to the perpetual rains, the road between MDS and CCS had become so bad that it took nearly five to six hours for the journey.

When the 161st Indian Infantry Brigade went into the lead, ADS 75 Indian Field Ambulance moved on to milestone 89 on 29 August, and to milestone 96 on 2 September. The road behind this ADS was very steep and muddy and jeeps were, therefore, used for evacuating casualties to MDS 10 Field Ambulance, which moved further south, and reached milestone 109 on 9 September. The chain of evacuation by now had become fairly long and it became necessary, therefore, to place 67 Indian Field Ambulance under command of the 5th Indian Division. This field ambulance opened staging post at milestone 62 on 9 September. The MDS of 75 Indian Field Ambulance had, by this time, moved from milestone 54 to milestone 99 and was joined by 5 Mobile Surgical unit, from 10 Indian Field Ambulance at milestone 82.

By 15 September, the ADS of 75 Indian Field Ambulance had been established at milestone 109, and on the following day it moved to the bank of the Manipur river. The L of C had now stretched considerably, and in the poor condition of the road, it became necessary to have a major medical unit enroute where patients might be admitted and detained for a considerable period. Hence 7 Indian Malaria Forward Treatment Unit—a Corps unit—was brought down from Dimapur to Imphal-Tiddim road and stationed at milestone 80, on 12 September. The staging post of 67 Indian Field Ambulance continued to function at milestone 62, and this unit was instructed to establish another post at milestone 97 on 18 September. As the advance progressed, and the evacuation time continued to grow longer, this second staging post was moved forward to milestone 109 and a third one took its place at milestone 97. 67 Indian Field Ambulance opened its ADS at milestone 125 on 24 September, and became responsible for the evacuation of casualties from this ADS to 7 IMFTU at milestone 80. In view of the ever increasing distance, another CCS was considered necessary for this L of C. 16 CCS, therefore, arrived in the forward zone and was sited at milestone 37, where it took over from 13 CCS which then moved on to milestone 82. 16 CCS started functioning on 19 September. The line of evacuation now was from 13 CCS to 7 IMFTU at milestone 80, and thence to 16 CCS at milestone 37. Battle casualties were very few and light, and most of those who had to be evacuated suffered from one form of disease or another.

Due to rapid deterioration of the Imphal-Tiddim road on account of monsoon, and the inability of the Fourteenth Army to maintain two parallel axes, it was decided to either hold the casualties or else carry them forward until Tiddim was reached where a divisional medical centre consisting of 17 CCS and 7 IMFTU was about to be set up. In preparation for this, 16 CCS and 7 IMFTU were moved forward to milestone 126 on 30 September. Earlier on 20 September, 45 Indian Field Ambulance had opened an MDS in Tuitum village near milestone 132, and started evacuating casualties across the river. 5 Mobile Surgical Unit moved from MDS 10 Indian Field Ambulance at milestone 109, and joined this MDS. The MDSs of 10 and 75 Indian Field Ambulances were closed down and moved forward to milestone 126 on 27 September ready to cross the Manipur river. 75 Indian Field Ambulance less ADS crossed the river on 29 September, and moved ahead of the MDS of 45 Indian Field Ambulance to milestone 139 and 10 Indian Field Ambulance crossed the river on 30 September. An Indian Dental Unit and 82 Mobile X-ray unit now moved forward and were placed under command of the 5th Indian Division to join the divisional medical centre at Tiddim.

The evacuation of casualties rearward by road ceased in the first week of October, and two of the staging posts were closed, and the personnel returned to Imphal. The casualties were now carried forward by all medical units and RAPs.

13 CCS remained at milestone 82, as it was holding a considerable number of patients, a large proportion of which were suffering from

Scrub-typhus. These cases travelled badly and required a careful nursing. Nursing sisters were, therefore, sent forward from Imphal to this CCS, which, by 7 October, had well over a hundred cases of scrub typhus.

In order to administer the units at milestone 82, a Corps field maintenance area was established. It continued to function until all evacuation had been completed. Evacuation from milestone 82 to Imphal was continued by road through a staging post at milestone 37. The condition of the road was the worst that could be imagined. Evacuation was carried out by jeep ambulances of 61 MAS and 67 Indian Field Ambulance and a section of the American Field Service. No possible alternative could be adopted. An attempt was made to use Tiger-moths, but three of them which had attempted to land on the air-strip at milestone 82 had crashed one after the other, so bad had the strip become, and the project had therefore to be given up. 13 CCS continued to function in this area till the end of October, when it closed down and moved back to Imphal together with the staging post at milestone 37.

Medical cover for the operations of 123rd Indian Infantry Brigade

The 123rd Indian Infantry Brigade which had been concentrated at Churachandpur by the end of August was given the task of making a wide outflanking move towards Tonzang from Shuganu on the eastern side of the Manipur river. The brigade group was to move on a mule basis, and march via Chakpi Karong-Mowbi-Khonon, and form a firm base at Anlung.

Accompanying the 123rd Indian Infantry Brigade were:—

- 45 Indian Field Ambulance
- A Company of 67 Indian Field Ambulance
- 67 Indian Staging Section
- A Surgical Unit
- Part of a Bearer Company
- A Sub-section of 7 Indian Field Hygiene Section.

The move commenced on 1 September. On this day, 67 Indian Staging Section opened a staging post at Shuganu and another one at Chakpi Karong. For its approach march, the brigade was divided into a number of columns, and to each of these a detachment of a field ambulance was attached. These detachments moved along the columns and established a staging post along the route. After the columns had passed, these staging posts closed up and moved forward to open again. No direct line of evacuation from these columns to Imphal had been organized. Until the columns reached Khaung Khan all evacuations were backwards through the staging posts to 19 CCS on the Palel road. The road from Palel to Waikhong was usable by motor ambulances. A car post was established at Waikhong on 3 September. From Waikhong to Chakpi Karong, the road was passable only by jeeps, and fifteen ambulance jeeps were placed at the disposal of 67 Indian Staging Section to evacuate cases to the Car post.

Forward of Chakpi Karong, even jeeps could not be utilised and therefore, all evacuation had to be carried by stretcher squad and riding mules. The responsibility for these evacuations was allotted to 45 Indian

Field Ambulance. On 12 September, a company of 45 Indian Field Ambulance, with a surgical team attached, moved forward to Anlung and two days later to Lungtak. The mules were now beginning to show signs of exhaustions, and the field ambulance company was experiencing great difficulty in getting patients and equipment transported. It, therefore, became necessary to move forward in sections.

On 14 September, the brigade came into contact with the Japanese for the first time.

By 16 September, a light MDS had been opened in Lungtak and admitted about seventy-five patients. On 17 September, 67 Indian Staging Section completed the evacuation from Shuganu area, and returned to Imphal.

Accompanying the column moving north-west on 18 October, to reach the Imphal-Tiddim road, was a detachment of the MDS of 45 Indian Field Ambulance and the surgical team. The column reached the main road on the river crossing, but no contact was made with the Japanese. The main body of the MDS moved forward with the casualties on 19 October, leaving behind a medical officer and six ORs to tend the immobiles. By this time, a detachment of the 75 Indian Field Ambulance with the 161st Infantry Brigade was already functioning on the west bank of the Manipur river. When the detachment of 45 Indian Field Ambulance reached the east bank of the river, all its patients were ferried across to 75 Indian Field Ambulance on the east bank, for evacuation along the main road to Imphal. The personnel and patients of 45 Indian Field Ambulance left behind at Lungtak were also now brought forward and ferried across the river to 75 Indian Field Ambulance. The HQ of 45 Indian Field Ambulance reached Tuitum village and opened its MDS in the vicinity. Evacuation from this MDS was backward to the river crossing by jeeps provided from divisional resources.

The 123rd Indian Infantry Brigade met with very little opposition, its battle casualties totalled six, and the sick 116 during the course of operation.

Medical Cover for the operations south of the Manipur river crossing

By 5 October, the following medical units were on the east bank of the Manipur river:—

- 10, 45 and 75 Indian Field Ambulances
- 161 Indian CCS
- 7 IMFTU
- 5 Mobile Surgical Unit
- 82 Mobile X-ray Unit
- 7 Indian Field Hygiene Section
- 8 Indian Bearer Company.

45 Indian Field Ambulance was now moved forward to Tonzang and 5 Mobile Surgical Unit arrived to relieve the surgical team from the 19 CCS which then crossed the river and rejoined its parent unit Palel. MDS of the 10 Indian Field Ambulance was opened on the east bank at the point of crossing. 7 IMFTU was split into two sections, 'A' and 'B', each having a bed strength of about 250. For the advance further south, leap frogging of the ADSs and MDSs continued.

On 5 October, 'A' Section of 7 IMFTU reached milestone 135 near the MDS of 45 Indian field Ambulance, and opened to receive patients. The same day, HQ 75 Indian Field Ambulance moved forward to milestone 145 and opened there to accommodate 100 patients. To this MDS, the surgical team from 16 Indian CCS was attached. 'B' section of the IMFTU moved on to milestone 145, and remained closed there till 13 October when it opened a small hospital of 100 beds, which was expanded to 200 later on. Casualties were now held and treated in the forward area. After the fall of Tiddim, the advance was continued along the Tiddim-Kalemyo road. On 19 October, HQ 10 Indian Field Ambulance moved forward to milestone 156 and established an MDS. 16 Indian CCS which had remained closed all along, was now moved forward to Tiddim on 23 October and started functioning there the next day. 82 Mobile X-ray Unit and 69 Indian Dental Unit, which had been functioning at milestone 135, were brought forward on 25 October, and together with a section of 7 IMFTU moved into Tiddim. The second section of 7 IMFTU then followed and joined up with the first section. The divisional field ambulances, having evacuated their patients to 7 IMFTU, gradually closed down and moved into Tiddim area, where they remained in reserve. The Officer Commanding 75 Indian Field Ambulance was attached to 7 IMFTU to supervise the care of typhus cases, which numbered about 200 by this time. By the end of October, the divisional medical centre in Tiddim was well established. It consisted of 16 Indian CCS and 7 IMFTU as the main units and a number of ancillary units in all together capable of holding about 800 patients. Since at this time, there was no possibility of evacuating casualties rearwards to hospitals in Imphal, most of the effective forward treatment had to be undertaken in this centre. An air-strip was constructed at Saizang about nine miles to the south of Tiddim on a spur, the only site available in this area, and the first light aircraft landed on it on 4 November. A detachment of 75 Indian Field Ambulance was stationed at this air-strip, to act as an air evacuation unit. L-5 planes of the USAAF based on Yazago in the Kabaw valley carried out to evacuation. The casualties so evacuated were received at the other end by 10 Belgian Congo CCS which was serving with the 11th East African Division. By 19 November, 421 casualties had been evacuated by air from the divisional medical centre at Tiddim. Scrub-typhus cases, however, were not transferred, even though evacuation by air had become possible, until they had been afebrile for a period of at least four weeks. The policy of having a forward medical centre paid rich dividends and reduced mortality considerably. The mortality in the case of typhus cases admitted in Tiddim was only seven per cent, which was comparatively a low figure in the theatre. One reason for this low mortality was the presence of seven nursing sisters in 16 Indian CCS, who gave particular care to these patients, during the early critical phase of the illness.

When the 161st Indian Infantry Brigade was instructed to make a wide outflanking movement towards Fort White, in connection with the attack on 'Kennedy Peak', a company of 75 Indian Field Ambulance, reinforced by 25 stretcher bearers, accompanied it. The casualties were to be carried forward, until the hook was complete and the brigade joined.

up with the rest of the division in Fort White area. As little as possible medical equipment was carried since arrangement for air dropping of the medical supply was made when considered necessary. The brigade marched for three successive nights through the jungle, and rested by day to avoid detection. It eventually reached Fort White on 8 November, by which date the 9th Indian Infantry Brigade had also arrived in this area, having advanced down the main road. The patients carried by 75 Indian Field Ambulance were brought to the divisional medical centre in Tiddim. On 9 November, instructions were issued for the move of HQs 10 and 45 Indian Field Ambulances to Fort White and establish a divisional MDS capable of accommodating 300 patients. Casualties were, however, few and so 10 Indian Field Ambulance remained closed in Fort White until 26 November. 75 Indian Field Ambulance opened there, admitted medical cases, whereas 45 Indian Field Ambulance, to which was attached 5 Mobile Surgical Unit, accepted all surgical cases. As the number of admissions decreased, 7 IMFTU in Tiddim was able to close, and move up to Fort White, having transferred its patients by air from the Saizang air-strip. 16 Indian CCS continued to function in Tiddim until 1 December.

With the fall of Kalemmyo, 7 IMFTU was moved forward to Taukkyan six miles south of Kalemmyo and established a hospital there on 21 November to receive casualties from Fort White. Evacuation by Dakota was now possible. On 26 November, 45 and 75 Indian Field Ambulances closed up in Fort White and moved forward to Kalemmyo, where they remained closed. 10 Indian Field Ambulances remaining in Fort White also closed down on 30 November, and moved forward to Kalemmyo, as all these medical units were expected to be flown out with the division to Imphal. 5 Mobile Surgical Unit was attached to 7 IMFTU in Taukkyan. On 2 December, 16 CCS closed in Tiddim and moved up to Kalemmyo, where a XXXIII Corps Medical Centre was established. This centre included 7 IMFTU, 82 Mobile X-ray Unit and 69 Indian Dental Unit. The task of the 5th Indian Division having completed, it now moved back by air and road to Imphal for rest and refit.

Advance across the river Chindwin to the Irrawaddy

During the monsoon when the Japanese were withdrawing from Imphal and Kohima area and were crossing to the east of the river Chindwin, the Allies had under consideration various plans for the total reconquest of Burma. Three alternative plans were ultimately formulated at the headquarters of the Supreme Allied Commander during June-July 1944. These were:—

(1) *Plan 'X'*

Envisaged the NCAC (Northern Combat Area Command) reinforced by more British and Indian Divisions from the Fourteenth Army, to be the main striking force, and to secure up to the line Katha-Lashio, while the Chinese Yunnan armies advanced to join up in the vicinity of Lashio.

The much reduced Fourteenth Army to conduct a limited offensive across the river Chindwin.

(2) *Plan 'Y'*

Fourteenth Army to be the main striking force and to secure the Mandalay area. The NCAC and Chinese Yunnan force to stage an offensive from the north in a limited way, and to join up with the Fourteenth Army in the vicinity of Maymyo.

(3) *Plan 'Z' (Operation Dracula)*

Capture of Rangoon by air and sea, followed by a drive northwards to link up with the Fourteenth Army thrusting south.

It was ultimately decided to adopt a combination of Plans Y and Z. This operation, which was given the code name of "Capital", had to take the following forms:—

- (a) An advance across the Chindwin by the Fourteenth Army supported by Royal Air Force to occupy the area between the Chindwin and Irrawaddy rivers, and exploitation to capture Mandalay.
- (b) A complementary advance by the NCAC and the Chinese Yunnan Force.
- (c) A limited advance in Arakan by the XV Corps supported by the Royal Air Force.
- (d) As these operations progressed, a sea and airborne assault to capture Rangoon some time before 1945 monsoon (about March).

General Slim, Commander Fourteenth Army was instructed by General Gifford, Commander 11 Army Group, to prepare for his part in operation "Capital"; which would consist of 3 phases:—

- Phase 1*— The capture of Kalewa and Kalemyo, by an overland and airborne advance.
- Phase 2*— An overland and airborne assault against the Ye-U area, to secure Burma down to Kalewa-Ye-U-Shwebo.
- Phase 3*— The securing of Burma down to a line Mandalay-Pakokku, where the Fourteenth Army could expect to join up with NCAC about Maymyo.

Reorganisation of Command

Early in November, certain organisational changes took place. 11 Army Group controlling army operations in South-East Asia was redesignated as Allied Land Forces in South-East Asia (ALFSEA), and placed under command of Lt. General Sir Oliver Leese. The ALFSEA now comprised of:—

(1) *Fourteenth Army consisting of:—*

- (a) IV Corps having—
 - 7th Indian Division
 - 19th Indian Division
 - 268th Indian Lorried Brigade
 - 255th Indian Tank Brigade.

- (b) XXXIII Corps comprising of:—
 - 2nd British Division
 - 5th Indian Division
 - 17th Indian Division
 - 20th Indian Division
 - 11th (East African) Division
 - 28th (East African) Division
 - 254th Indian Tank Brigade
 - Lushai Brigade.
- (c) Northern Combat Area Command consisting of:—
 - (i) 36th British Division
 - (ii) 1st Chinese Army of:—
 - 30th Chinese Division
 - 38th Chinese Division
 - 50th Chinese Division
 - (iii) 6th Chinese Army of:—
 - 14th Chinese Division
 - 22nd Chinese Division
 - (iv) MARS Task Force of:—
 - One American Infantry Regiment
 - One American Cavalry Regiment
 - One Chinese Regiment
 - (v) One Chinese Tank Brigade.
- (d) L of C Command consisting of:—
 - 202 Lines of Communication Area
 - 404 Lines of Communication Area
 - A large number of basic units.
- (e) Ceylon Army Command consisting of:—
 - Three locally enlisted battalions Basic Units
 - Garrisons in Addu Atoll and Diego Garcia.
- (f) Units/Formations in India:—
 - 23rd Indian Division
 - 31st Indian Division (Special Force)
 - 50th Indian Parachute Brigade
 - Two Tank Regiments
 - A number of small units.

The tasks assigned to the major components of ALFSEA were as follows:—

- (a) XV Corps—
 - (i) by a limited offensive to clear Arakan down to the line Akyab-Minbya, thereby relieving a number of units for employment elsewhere
 - (ii) to secure a base for mounting the operation "Dracula".
- (b) NCAC—
 - (i) to recapture and secure the trace of the old Burma Road and its junction with the new road
 - (ii) to hold the Myitkyina air bases
 - (iii) to conform with the Fourteenth Army in its advance on Lashio.
- (c) Fourteenth Army—
 - (i) to seize Kalewa and Kalembo while forces of NCAC advanced to a line Hopin-Nalong.

- (ii) an overland and airborne assault against the Ye-U area, and to secure Burma down to line Kalewa-Ye-U-Shwebo, while the NCAC force made a complementary advance to the line Thabeikhyin-Mogok-Mongmit-Lashio.
- (iii) to secure Burma down to a line Mandalay-Pakokku, while the NCAC forces advanced to the line Maymyo-Lashio.

Phase I of "Capital", namely the capture of Kalewa and Kalembo, was already under way at this time, November 1944, and the forces employed were being maintained from the existing Palel Advance Base. The general military situation on various fronts was as follows:—

- (i) In the XV Corps area in Arakan, the 81st West African Division had reached the outskirts of Paletwa in its advance down the Kaladan Valley, and the leading brigade of 82nd West African Division had arrived in Arakan.
- (ii) On the central front in the Tiddim-Kalembo area a Brigade of 5th Indian Division of XXXIII Corps had captured 'Kennedy Peak' on 5 November.
The Stockade had been taken on 10 and 12 November. 11th East African Division, advancing down the Kabaw Valley was about to link up with 5 Indian Division and to enter Kalembo.
- (iii) In NCAC, 36th British Division had almost reached Pinwe, and 38th Chinese Division had occupied Myothit and Lungling. The re-opening of land communication with China was imminent.

Fourteenth Army crosses the Chindwin (Nov.-Dec., 1944)

Since the reorganisation of the Army Command, mentioned earlier, the Fourteenth Army had consisted of only the IV and the XXXIII Corps, and these two formations were now to be employed for the main purpose of destroying Japanese main forces in central Burma.

Instructions were issued to IV Corps to break through to Shwebo Plain from Sittaung and to seize air strips in the Ye-U-Shwebo area. XXXIII Corps was ordered to cross the Chindwin in the Kalewa area, and advance on Ye-U. As soon as the two corps made contact, 255th Indian Tank-Brigade of IV Corps was to join this Corps through the XXXIII Corps. The Lushai Brigade and 28th East African Brigade were to protect the flank and line of communication of the XXXIII Corps on the west bank of the Chindwin south of Kalembo.

IV Corps

It will be remembered that after the siege of Imphal, Headquarters IV Corps was withdrawn, and sent to Ranchi for a brief period of rest and refit for mobile operations. Towards the end of October, it returned from India and reopened near Imphal on 1 November 1944. The Corps was assigned the task of establishing a bridge head across the river Chindwin at Sittaung, thrust forward to seize Pinlebu, and then proceed to Indaw. The idea behind this advance was to take over Burma's main railway line from 36th British Division which was operating down the railway corridor thus freeing the latter to concentrate on helping the Chinese and American Mars Task Force to clear the Burma Road,

and reopen land communication between India and China. The Corps' choice for this task fell upon the 19th Indian Division, popularly known as the "Dagger Division" from the sign on its divisional emblem.

Operations of the 19th Indian Division

On 9 November the 19th Indian Division received orders to:—

- (a) Capture Pinlebu by an overland advance, and thereafter proceed in the direction of Indaw-Katha to establish contact with NCAC, as also towards the rail-road in the area of Wuntho-Indaw;
- (b) Reconstruct as early as possible the Tamu-Thanan-Tonhe and Tamu-Sittang roads;
- (c) Reconnoitre and develop air-strips.

The above task was assigned initially to the 62nd Indian Infantry Brigade of the 19th Indian Division. This brigade alongwith supporting troops concentrated on milestone 8 on the Tamu-Sittang track. All available resources were allotted to the task of improving communications to the river Chindwin. By 18–19 November, the 62nd Indian Infantry Brigade crossed the Chindwin on rafts at Sittang without any opposition. Reconnaissance reports were so favourable that on 20 November, the plan was changed and it was decided that the whole division should take part in this advance. The ultimate intention was to move one brigade on the southern route as already decided to Pinlebu with another brigade on the northern route Wetkawk-Sinlaumaung. The third brigade of the division was to hold the bridgehead area, until the advance was well under way, and then move along the northern route to Pinlebu. The 268th Indian Infantry Brigade was to co-operate in the advance by a swift move to hold the passes on the escarpment to the east of river Chindwin.

The advance progressed as planned. Several clashes occurred with the Japanese during the next few days. Meanwhile, a light-aircraft strip was hurriedly constructed on 26 November, at Nanbon, from which the first Allied casualties were successfully evacuated. The advanced elements of the 62nd Indian Infantry Brigade pushed forward to Ontha, and were ordered to concentrate at Wayongon before moving on to Pinlebu with all possible speed. By 5 December, the 64th Indian Infantry Brigade of this division had reached Wetkawk-Le. V. area, and was moving rapidly towards Pinbon. On 15 December, Pinbon was entered and contact with NCAC forces was established, as the brigade advanced towards Indaw. The same day, the 62nd Indian Infantry Brigade commenced the final stage of its move to Pinlebu. The Mu river was crossed at Pintha and Ingon, and Pinlebu was entered on the afternoon of 16 December. The advance of the 62nd Indian Infantry Brigade continued without incident. Wuntho was occupied on 19 December and Kawlin on the following day. The 64th Indian Infantry Brigade entered Banmauk unopposed and a patrol moved forward to Rail Indaw where it made contact with the troops of the 36th British Division, thus establishing more or less a continuous Allied front from

India to the Chinese border. The third brigade of the division, 98th, was following close on the heels of the 64th Indian Infantry Brigade. Nankan was entered by the 64th Indian Infantry Brigade on 19 December, after slight opposition, while the 98th Indian Infantry Brigade reached Kawlin on 21 December. By the 23rd, Kyaikthin, had been entered. A new plan of operations, which will be described later, was now formulated by Lieut-General Slim, Commander Fourteenth Army, under which the 19th Indian Division was placed under the command of the XXXIII Corps. The division at this time had reached Kokkagon about 25 miles south-east of Wuntho. A new assignment was given to this division by XXXIII Corps, by which it was to continue on its existing axis, and capture Shewbo. Thereafter the division had to cross the Irrawaddy near Thabeikkyin and operate against Mandalay. For its advance to Shewbo, its 98th Indian Infantry Brigade was moving on Kanbalu, its 64th Indian Infantry Brigade on Baw and its 62nd Indian Infantry Brigade on Sandwinyi. Stubborn opposition was met at a number of places, which were overwhelmed with the aid of air strikes at times. By 2 January, Kanbalu was entered, and the gateway to the plains had been opened. The 62nd Indian Infantry Brigade entered Indlegyi and 64th Indian Infantry Brigade concentrated on Myemun, sending patrols to Male and Thabeikkyin on the Irrawaddy. At Myothit, this brigade ran into strong opposition, which was finally overcome on January 7 and the leading elements of this brigade probed their way into Shewbo. The 62nd Indian Infantry Brigade closely following relieved the detachments of the 64th Indian Infantry Brigade, in the river side villages of Male, Thabeikkyin and Kabwet. The 98th Indian Infantry Brigade advancing from Sainggaung reached Kin-U on 6 January. On the following day, it reached the outskirts of Shewbo. The division now concentrated its attention upon clearing the west bank of the river Irrawaddy between Thabeikkyin and Singu, prior to crossing it.

Medical Cover for the 19th Indian Division

The medical cover to the 19th Indian Division was provided by 51, 52 and 53 Indian Field Ambulances. These units moved with the division to its concentration area on the Tamu-Sittaung road. ADSs were attached to the brigades by the field ambulances during the crossing of the river Chindwin. A divisional MDS was established by 51 Indian Field Ambulance in Thanan, which also opened an ADS at milestone 6 on the Thanan-Tonhe road casualties were evacuated to 24 Indian CCS in Tamu by MAS. On 4 December, 53 Indian Field Ambulance opened in Tonhe to provide medical cover to 98 Indian Infantry Brigade. Evacuation from this medical unit was through MDS of 51 Indian Field Ambulance to Tamu. Evacuation across the Chindwin was rather difficult as in this area the river was about 300 yds. wide, and there was no bridge. Casualties had, therefore, to be ferried across by boat. The road was also bad, and it took nearly eight hours for the casualties to reach Tamu from the RAPs. On 11 December, 52 Indian Field Ambulance opened its MDS in Leu. Casualties had to be retained in this field ambulance, since there was no immediate arrangement for their evacuation.

On 14 December, 51 Indian Field Ambulance reached Sinlamaung, after being relieved by 52 Indian Field Ambulance in Leu. 53 Indian Field Ambulance followed and reached Sinlamaung on 21 December. With the rapid advance of the division, 51 Indian Field Ambulance moved from Sinlamaung to Pinlebu, and on 19 December reached Wuntho. There it opened an MDS, and was joined by 4 MSU. There was an air-strip near Kawlin, about 6 miles from MDS, and here 53 Indian Field Ambulance provided an improvised air evacuation centre. Casualties were evacuated from this place by Dakota aircraft. In order to keep pace with the rapid advance of the division, 53 Indian Field Ambulance, less one company, was now mechanised, issued with extra equipment, and attached to the 64th Indian Infantry Brigade. On 26 December, 51 Indian Field Ambulance moved from Wuntho via Kawlin to Tinhmaw to join the 62nd Indian Infantry Brigade, which was then engaged in heavy fighting against the Japanese, and had suffered considerable casualties. The field ambulance opened its MDS and treated all the cases. Thereafter it shifted to Kyaikthim railway station, where nearly 300 patients could be accommodated and a very satisfactory arrangement existed for medical as well as surgical treatment. Separate wards were available for the treatment of light surgical, skin and dysentery cases. Evacuation from the front line to the MDS, however, presented a good deal of difficulty. Casualties had to be hand-carried, along narrow, steep tracks which were overlooked by the Japanese. Evacuation backwards from the MDS, however, was quite satisfactory both by road, as well as by light aircraft from an air-strip close to the MDS. It took nearly three to four hours by road, and only 10 minutes for the air journey from 51 Field Ambulance backwards to air evacuation centre of 53 Indian Field Ambulance.

53 Indian Field Ambulance, less one company, which remained at Kawlin air-strip, accompanied the 64th Indian Infantry Brigade throughout its advance. 52 Indian Field Ambulance moved from Sinlamaung to Pinbon on 29 December, and later to Kyaikthin where 51 Indian Field Ambulance was functioning. It moved next to Thityabin, where it established an MDS in dug outs. On 4 January, 51 Indian Field Ambulance also moved to Thityabin, and opened an MDS at Kin-U the next day to serve the 98th Indian Infantry Brigade engaged in heavy fighting. As this brigade advanced, the field ambulance opened in Bodgon, ten miles to the south of Kin-U, one company being attached to the brigade to provide an ADS when required. HQ 51 Indian Field Ambulance followed the advance of the 98th Indian Infantry Brigade, and moved to Zigon on 6 January. The MDS of 52 Indian Field Ambulance at Thityabin now became the main divisional MDS 4 MSU was attached to this MDS, and an air-strip was constructed near it for the evacuation of casualties. On 8 January, this MDS also moved to Zigon area but remained closed as MDS 51 Indian Field Ambulance was already functioning there. Meanwhile, 53 Indian Field Ambulance which was functioning in Zin remained there till 5 January, when it moved into Myemun, and later to a point two miles east of Shwebo with the 64th Indian Infantry Brigade. The detachment of the field ambulance which was functioning as an air evacuation centre at Kawlin,

now rejoined its parent unit, and the whole unit moved to Taon on the west bank of the Irrawaddy, five miles east of Shwebo. The MDS of 51 Indian Field Ambulance together with HQ 52 Indian Field Ambulance remained at Zigon, the former functioning as the main divisional MDS to which 4 MSU was now attached from 52 Indian Field Ambulance.

An air-strip was constructed within 200 yards of this divisional MDS. Casualties were now very heavy and on a single day (9 January), as many as 87 of them were evacuated by air from the MDS. After the capture of Shwebo, there was a lull in the fighting, and the medical units were given time to rest and re-organise.

Operations of the XXXIII Corps in Central Burma

XXXIII Corps had been allotted the following tasks:—

- (a) to capture the area Kalemmyo-Kalewa,
- (b) to establish a bridgehead over the river Chindwin at Kalewa,
- (c) to advance astride the road Kalewa-Pyingaung-Ye-U as quickly as possible and to capture Ye-U.

To achieve the first of the above objects, two divisions of the Corps were converging in October–November, 1944 on the Kalemmyo–Kalewa area—the 5th Indian Division from the west along the axis Fort White–Kalemmyo and the 11th East African Division from the north along road Tamu–Kalemmyo and along both banks of the Chindwin from Mawlaik with the ultimate object of capturing Kalewa.

On 16 August, 26th Brigade of the 11th East African Division crossed the Yu river and having overcome the resistance of a series of Japanese rear-guards entered Sittaung on 4 September. By 10 September, a small bridgehead had been established on the east bank of the Chindwin. The rest of the division entered Kabaw valley and sweeping all opposition division reached a point only five miles from Kalemmyo on 12 November. The town was entered by 21st and 25th East African Brigades along with 5th Indian Division on 13 November. 26th East African Brigade occupied Indianggyi while 25th East African Brigade moved down the axis towards Kalewa which was entered on 2 December. During the night 3/4 December, 25th East African Brigade crossed the Chindwin at Kalewa and was followed by 26th East African Brigade. The Japanese then started withdrawing towards Shwegyin which was occupied on 13 December.

Operations of the 20th Indian Division

In phase I of operation 'Capital', it had been provided that three main bridgeheads should be established across the river Chindwin. Two of these were formed by the 19th Indian Division at Sittaung and the 11th East African Division at Kalewa. A third crossing was to be made between these two at Mawlaik, at about thirty miles to the north of Kalewa, by the 20th Indian Division operating under control of XXXIII Corps. Under orders issued on 10 November, the main task of this division was to provide one infantry brigade group of four battalions on

animal transport to operate eastwards from Mawlaik on the axis Chingyaung-Pyngaing. The rest of the division was to concentrate in Htinzin area in Corps reserve and to be prepared to move one infantry brigade to the Kalemyo area in relief of the 5th Indian Division. To carry out the above tasks, the following plan was prepared by the 20th Infantry Division:—

- (1) Its 32nd Indian Infantry Brigade to move via Shuganu-Mombi-Khampat and complete its concentration in the area Sunle.
- (2) Its 80th Indian Infantry Brigade to be prepared to move to the area Kalemyo in relief of the 9th Indian Infantry Brigade of the 5th Indian Division.
- (3) The rest of the division to be prepared to move to the area Htinzin.

Accordingly on 22 November, 32nd Indian Infantry Brigade started moving, and by 3 December, concentrated at Mawlaik. The crossing of river Chindwin commenced on 6 December and was completed by 8 December without encountering any opposition. Over 5,000 men, 1,450 mules, and 30 tons of equipment crossed on rafts in less than 100 hours. The brigade then set out for Pyngaing where it reached on 16 December.

Earlier on 3 December the 80th Indian Infantry Brigade moved south, relieved the 9th Indian Infantry Brigade, and was placed under direct command of HQ XXXIII Corps. The task allotted to this brigade was the protection of air fields, patrolling of the east bank of the Myittha river, and to maintain contact with the Lushai Brigade in the south.

The rest of the division crossed Chindwin on 19 December.

Operations of the 2nd British Division

This division had also joined the XXXIII Corps on 21 November. By 7 December, the division had moved from its rest area at Maram to Yazagyo area. On 2 December, a brigade of this division moved into the bridgehead of the 11th East African Division in the Kalewa area. This was followed by the rest of the division which completed its move by 17 December and relieved the 11th East African Division.

Thus by the middle of December 1944, the Chindwin had been crossed at three places, at Sittaung by the 19th Indian Division, at Kalewa by the 11th East African Division and at Mawlaik by the 20th Indian Division. Phase I of the 'Capital' had been completed, and forces of the Fourteenth Army were poised for the next phase which was to bring the main Japanese strength to battle in Central Burma and defeat it.

New Plan

As the opposition encountered by the leading formations of the Fourteenth Army in their crossing of the Chindwin, and in the subsequent advance towards Shwebo plain, had been so slight, it was concluded

that the Japanese Commander was not intending to dispute the Allied advance to the Irrawaddy, but was withdrawing beyond this river, to take up defensive positions on its eastern bank. This, however, became evident only in mid-December, when it was observed, that considerable Japanese forces had already withdrawn behind the Irrawaddy. Since the tactical planning of the Fourteenth Army so far had been based on the reasonable assumption that the Japanese would decide to stand and fight in the Shwebo plain, this deliberate withdrawal behind the Irrawaddy called urgently for a new tactical plan. The essence of the new plan was to strike the hostile force in its rear. This could be done by a regrouping and redirection of the two Corps in order to get a force to the south of the Japanese concentration along the river, while another force should attack from the north. According to it, XXXIII Corps was to keep on its objectives Shewbo, Monywa and Mandalay, thus holding the Japanese by a frontal attack. The IV Corps was to be switched over from the left flank of the Fourteenth Army to the right flank and was to advance secretly with all the speed down the Gangaw valley across the Irrawaddy somewhere in the Pakokku area, and strike at Meiktila, an important strategic road and rail centre on the Japanese line of communication from Rangoon to Mandalay. In this manner, it was hoped to crush the Japanese between the two Corps, XXXIII Corps coming down from the north, and IV Corps from the south. If this battle ended in victory, it was intended that the Fourteenth Army should rush southwards with all possible speed to take Rangoon before the monsoon broke.

The new plan, was indeed, very bold, but full of administrative risks. There was, however, no other alternative to it and, therefore, had to be pushed through. The boldness of the plan is clear from the fact that the IV Corps had to move down the Gangaw valley for about 320 miles in secrecy, making its own roads, and then at the end of this long march, had to seize Meiktila and its air fields by surprise and sudden air assault. All the administrative planning had to be completed in less than two months, at a time when the air transport situation was none too bright. Considerable number of air-craft allotted to the Fourteenth Army had to be withdrawn all of a sudden for air lifting Chinese divisions in Burma to China, as the Japanese were threatening the Chinese Capital.

At this time, there was a redistribution of the formations between the two Corps as follows:—

XXXIII Corps was to consist of :—

- 2nd British Division
- 19th Indian Division
- 20th Indian Division
- 254th Indian Tank Brigade
- 268th Indian Infantry Brigade.

IV Corps to have :—

- 7th Indian Division
- 17th Indian Division
- Lushai Brigade
- 28th East African Brigade groups.

The above redistribution left out the 5th Indian Division which was resting in the Kohima area, and acted as army reserve. Despite withdrawal of air transport, and the Chinese army from Burma theatre, as mentioned earlier, Fourteenth Army proceeded with the preparations for the offensive undaunted. Numerous air strips were constructed, repair and maintenance of the railway line, wherever it was available was carried out. Large number of boats were produced by the ingenious engineers of the Fourteenth Army, helped by Inland Water Transport Companies from India, to use them as water transport in river Chindwin. All these tasks were completed within a period of two months, and operations of the Fourteenth Army commenced without much dislocation.

Operations of the XXXIII Corps

The new plan did not affect the XXXIII Corps to any great extent, and its tasks redefined on 19 December, remained almost the same as before. These were:—

- (1) To capture and construct air fields in the Ye-U-Shwebo area.
- (2) To capture Monywa and construct air fields there.
- (3) To cross the Irrawaddy, capture Mandalay, and be prepared for an advance southwards.

On 22 December, the Corps Commander allotted the following tasks to the formation commanders:—

- (1) The 2nd British Division was to continue its advance on the main axis, and capture the area Ye-U-Shwebo, as rapidly as possible, and prepare for an advance southwards on Mandalay.
- (2) The 19th Indian Division was to continue to advance on its existing axis, the railway Kawlin-Kanbalu-Shwebo, capture Shwebo; and thereafter to cross Irrawaddy and operate against Mandalay.
- (3) The 20th Indian Division on the right was to advance south-east on axis of the Chindwin river and track Pyingaing-Palusawa-Songon-Budalin.

The object was to capture Monywa, and then cross Irrawaddy to operate against Mandalay from the south-east.

- (4) The 268th Indian Infantry Brigade was to move down to Mu river, and maintain contact by means of patrols with 2nd British and 19th Indian Divisions.

It was considered very essential to advance quickly and seize air-strips in the Shwebo plain, so that they could be used immediately for the maintenance of the Corps, and to afford more fighter cover. Without these air fields, the rear services could not hope to maintain a Corps of three and a half divisions and an armoured brigade along a line of communication which ran through difficult terrain.

Operation of 2nd British Division

This division passed through the 11th East African Division's position in the Kalewa bridgehead on 19 December, and advanced rapidly to Pyingaing, reaching there on 23 December.

On the following day, contact was established with the patrols of the 32nd and 100th Infantry Brigades of 20th Infantry Division which had marched cross-country from the Chindwin at Mawlaik to operate against the Japanese flank in the Pyingang area. The 6th British Brigade which was in the lead, then moved on to Wainggyo and Kaduma, having to fight for the possession of these places. Kaduma was entered on 31 December. The same day the brigade set out for Kaboweir, the headquarters of the irrigation system of Shwebo plain and captured it in tact. The 5th British Brigade of the division, which had followed up the advance, moved rapidly forward and entered the town of Ye-U on 2 January, 1945. The Japanese rear-guard in this town fought a skilful delaying action, but by 3 January, the town was cleared. Thereafter the brigade advanced, established bridgehead on the Mu river by 5 January, and the division got ready to move forward to Shwebo.

The third brigade of the division (4th British Infantry Brigade) remained in the Kabaw valley, until transport was available from the other brigade to ferry them forwards. This brigade moved to the rear of the division to Kaduma on 2 January. On 6 January the advance was taken up by both 4th and 5th British Infantry Brigades, the 4th Brigade along the axis of the Ye-U-Shwebo road, while the 5th Brigade on the axis of Shwebo Canal. Opposition was encountered by 4th Brigade at Payan but was quickly overcome. The 5th Brigade also met with slight opposition, but reached Myingatha, 7 miles north-west of Shwebo. It was on account of these oppositions that 2nd British Division had to halt a few miles short of Shwebo town on 7 January, while the 19th Indian Division entered it from the eastern side. However, the 2nd British Division entered Shwebo the next day (8 January) and the two divisions started clearing the place. Thereafter, the 4th Brigade continued to advance on the axis of the Shwebo-Sagaing railway, and the 5th Brigade on the axis of the Shwebo-Mandalay road.

By 16 January, the forward elements of the division probing the line of the railway reached a point within 1,000 yards of Padu, which was found to be strongly held. On 17 January, the 6th Brigade concentrated at Taganan, and the following day, the 4th Brigade concentrated at Sadaung and the 5th Brigade at Wetlet. By 18 January, the leading troops of the 2nd Division had reached the line approximately fifteen miles south of the position of the leading troops of the 20th Indian Division in the Monywa area, and approximately thirty miles south of the leading troops of the 19th Indian Division at Kyaukmyaung. 4th Brigade reached Wetthabok by 20 January, while the 5th Brigade commenced patrolling the west bank of the Irrawaddy, in order to mop up Japanese stragglers and also to prevent their infiltration from the east bank of the Irrawaddy. On 21 January, the 4th Brigade liquidated the Japanese resistance in Wetthabok, and then proceeded to Ondaw village, which was captured on 22 January after a minor opposition. From there onwards the brigade took up the lead and continued its advance south of Ondaw with the object of capturing Kyaukse and Ywathitgi.

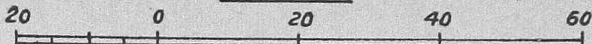
On 31 January, after a heavy air-strike and bombardment, Ywathitgyi was finally occupied, and in a similar manner Kyaukse was captured on 4 February.

DEC 1944-JAN 1945

SCALE OF MILES

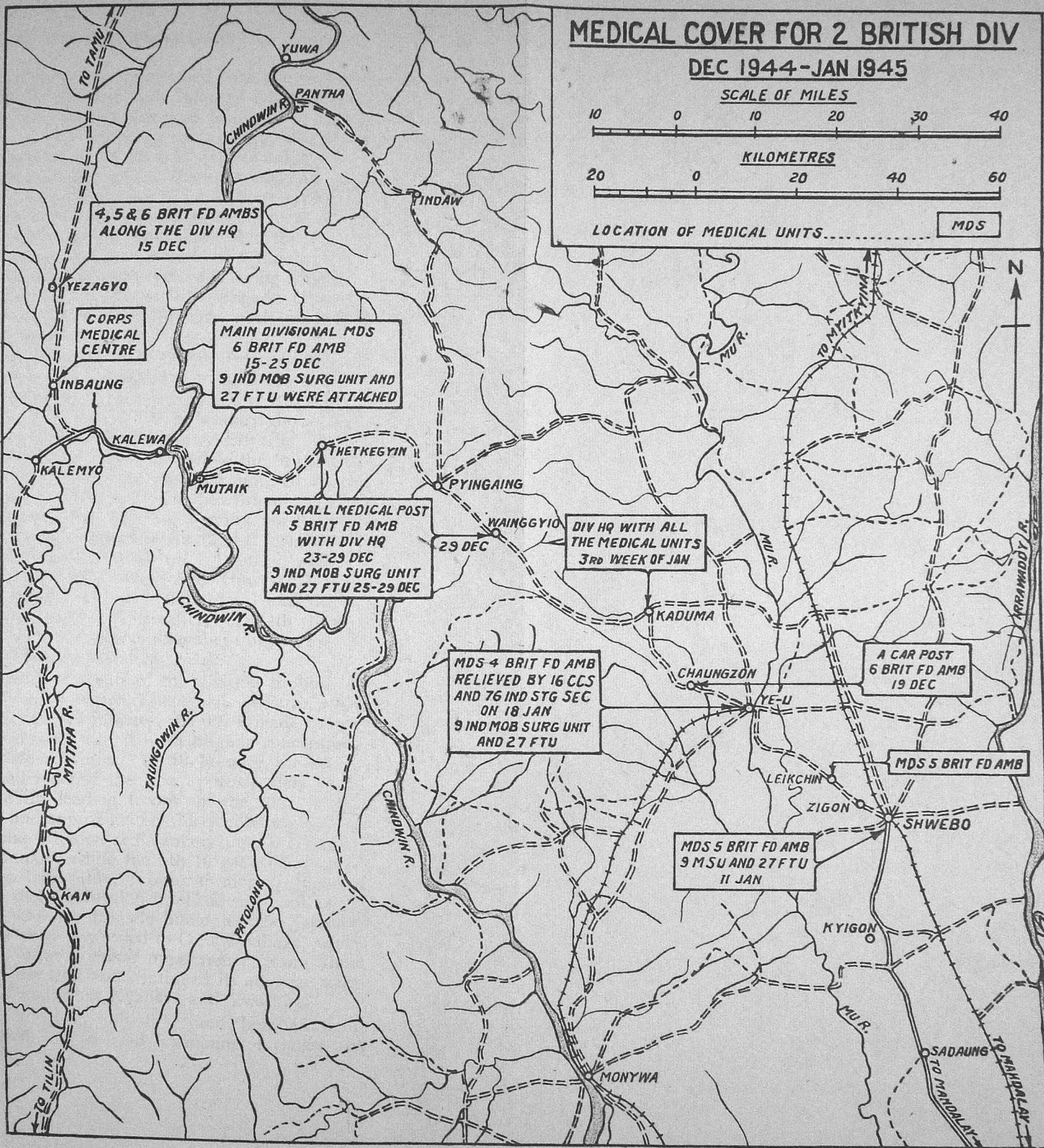


KILOMETRES



LOCATION OF MEDICAL UNITS

MDS



After the capture of Kyaukse and Ywathitgyi, the 6th Brigade moved forward to the Ywathitgyi area, and along with the 5th Brigade prepared for the crossing of the Irrawaddy while 4th Brigade continued to press the Japanese in their Sagaing positions.

The Medical Cover for 2nd British Division

The field ambulances with 2nd British Division were the 4, 5 and 6 British Field Ambulances, which were located at Yazagyo in the Kabaw Valley along with the divisional headquarters. On 15 December, the 6 British Field Ambulance established the main divisional MDS at Mutaik. No. 9 Indian Mobile Surgical Unit and the 27 FTU were attached to the MDS at Mutaik. The first field Ambulance to cross the river Chindwin was 5 British Field Ambulance attached to the 6th British Brigade. On 19 December, 6 British Field Ambulance opened a Car post at Chaungzon on the Kalewa—Ye-U road. Meanwhile, the other medical units were being gradually concentrated in Chaungzon. The divisional headquarters moved to Thetkyigin on 23 December. The 5 British Field Ambulance opened a small medical post near the air-strip in that area and casualties were evacuated by light aircraft to Inbaung, the Corps medical centre. As the divisional advance continued to Pyingaing, the MDS 6 British Field Ambulance at Mutaik closed on 25 December, after evacuating all casualties to the rear units. The mobile surgical unit as well as the field transfusion unit attached to this MDS now moved forward and joined the detachment of 5 British Field Ambulance at Thetkegyin. On 28 December this group of units moved to Wainggyo. By the third week of January 1945, the divisional headquarters with all the medical units was concentrated in the Kaduma area. The 6 British Field Ambulance had an ADS functioning here evacuating casualties by air. With the fall of Ye-U, the 4 British Field Ambulance moved to the air-strip at Ye-U, opened an MDS there and began evacuating casualties by air. At this period this MDS was receiving casualties from all the brigades of the division and on 8 January, about 200 cases were in the MDS. To cope with the heavy work, the mobile surgical unit and the field transfusion unit were brought forward to be attached to this MDS. Meanwhile, the 5 British Field Ambulance which was functioning earlier as MDS at Kaduma closed down and moved to Leikchin on the Ye-U-Shwebo road leaving one company with the MDS in Ye-U. 4 British Field Ambulance assisted them in their heavy work. On 11 January, 5 British Field Ambulance moved to the south of Shwebo and opened an MDS. 5 MSU and 27 FTU were attached to this MDS to assist in surgical cases. On company of the 5 British Field Ambulance moved to Zigon and then to Kyigan on 18 January. Meanwhile, 4 British Field Ambulance had closed at Ye-U and was relieved by 16 CCS and 76 Indian Staging Section which had arrived in the area. This field Ambulance now moved forward to Sadaung, MS 39 Shwebo-Mandalay road. The unit opened an MDS here to which the mobile surgical unit, the field transfusion unit and the divisional psychiatric team were attached. These medical arrangements continued till the end of operations of the 2nd British Division during this phase.

Operations of the 20th Indian Division

The 20th Indian Division, after a period of rest and refit was placed under the command of XXXIII Corps by the beginning of December. The 80th Indian Infantry Brigade moved to Kalemyo area, where it relieved the 9th Indian Infantry Brigade of the 5th Indian Division. The 32nd Indian Infantry Brigade crossed the Chindwin on 10 December. The primary object of the advance of this brigade was to clear the hilly and jungle area on the flank of the 2nd British Division, whilst the latter advanced down the road from Kalewa. In view of the Japanese withdrawal in this sector, the 32nd Indian Infantry Brigade was instructed to help in the advance of the 2nd British Division by establishing road blocks and ambushes to the east of Pyingang. Having accomplished this task, the 32nd Indian Infantry Brigade concentrated in Pyingang, and began its advance southwards to join the 20th Indian Division which had already commenced advance to Maukkadaw. The advance to Maukkadaw was uneventful and the division concentrated, therefore, prior to its advance to Budalin.

The 32nd Indian Infantry Brigade advancing from the north made excellent progress in its approach towards Budalin. Leading elements of the brigade had reached Kudaw to the north-west of Budalin on 5 January. The Japanese did not put up any resistance to the advance of the 20th Indian Division. A detachment from the division was given the task to clear the Chindwin on the west bank south of Kalewa. Operations against Budalin by the 32nd Indian Infantry Brigade began on 5 January, but the Japanese fought back with unexpected determination. It was not until 10 January that Budalin was finally occupied, after the last of the Japanese defenders had been overcome. A few determined men had delayed the advance of the brigade for six full days.

Earlier, on 3 January, the 80th Indian Infantry Brigade, the rear brigade of the 20th Indian Division reached Maukkadaw. The 20th Indian Division (less two brigades) advanced to Kyaukhlega and was instructed to push forward a small mobile column at great speed towards Monywa, if possible, and to establish a patrol base to the north of Monywa and harass the Japanese operating in the area. By 6 January, 100th Indian Infantry Brigade had reached Budalin and the two brigades, namely, the 100th and 32nd Indian Infantry Brigades were instructed to change flanks when they reached beyond Budalin. The 32nd Indian Infantry Brigade was directed on Monywa, whilst the 100th Indian Infantry Brigade on Ayadaw.

After the capture of Budalin on 10 January, 32nd Indian Infantry Brigade crossed over to the right flank and began the advance to Alon, which was reached on 13 January. Patrols were pushed forward south to Monywa to determine the extent of the Japanese resistance. The 80th Indian Infantry Brigade, advancing along the east bank of the Chindwin river, reached Winmana by 12 January and a detachment operating on the west bank of the Chindwin river reached Kani the same day, keeping abreast with the advance on the east bank. As the 32nd Indian Infantry Brigade closed on Monywa, it encountered some opposition from the Japanese positions to the east of Alon. The plan of attack

on Monywa was for one battalion to advance along the main road whilst the task of outflanking the town to the north and south was allotted to the remaining two battalions. By 16 January, operations to clear Monywa on the river Chindwin and Ayadaw, the objective of 100th Indian Infantry Brigade were well under way. At Monywa fighting was fairly severe but all escape routes to the east of the city had been blocked. By 17 January, the 32nd Indian Infantry Brigade had completely surrounded Monywa. Aided by heavy air-strikes, the operations continued during the succeeding days, and Monywa was firmly in allied hands by 22 January. Earlier on 14 January, the 100th Indian Infantry Brigade had also made considerable progress in its advance towards Ayadaw. On 16 January, several parties of the Japanese were located in and around Ayadaw. To liquidate these positions, they were heavily bombarded. The Japanese withdrew and Ayadaw was captured on 16 January. 100th Indian Infantry Brigade now followed the retreating Japanese towards Myinmu on the northern bank of the Irrawaddy. Minor resistance in the vicinity of Tizaung was overcome and the advance of the brigade continued towards Myinmu and Allagappa. On 20 January, Myinmu fell to 100th Indian Infantry Brigade and on 24 January Allagappa was occupied. Three days later Chaung-U was entered. The Japanese were still holding a small triangular area between Chaung-U and Allagappa, which was cleared by the 80th Infantry Brigade. Some Japanese resistance was still found near Let Kapin. This was overcome by 100th Infantry Brigade and Let Kapin was entered on 1 February. By 12 February the entire area occupied by 20th Indian Infantry Division had been cleared.

Medical Cover for the 20th Indian Division

The medical units which arrived with the 20th Indian Division were 42, 55 and 59 Indian Field Ambulances, 26 Indian Field Hygiene Section and certain other ancillary units. 59 Indian Field Ambulance was attached to the 32nd Indian Infantry Brigade. The brigade, as it moved under the command of the XXXIII Corps was instructed to concentrate in the Sunle area. An MDS was established by the field Ambulance at Htinzin and moved with the brigade in the thick jungle to form an ADS. A mobile surgical unit namely, 10 Indian Mobile Surgical Unit, was attached to the ADS to carry out forward surgery. Casualties were evacuated from the MDS to Moreh or Tamu air-strip for onward transmission to base hospitals. After the 32nd Indian Infantry Brigade crossed the river Chindwin, the MDS took on the role of a holding MDS. It dealt with the rear troops located in the area. All patients who were expected to be discharged within a week's time were held at the MDS. Others were evacuated by air or road to 13 CCS near Inbaung, the XXXIII Corps medical centre at that time. The MDS moved from this area on 31 December and arrived and opened by the side of MDS, 47 Field Ambulance in the Kyigon area on 1 January. It began to function here, evacuating cases to the XXXIII Corps medical centre. One company of the field ambulance had to be attached with the 32nd Indian Infantry Brigade. The 59 Indian Field Ambulance remained in this area until 20 January when it moved to Budalin, where

it remained closed, as the 42 Indian Field Ambulance and 10 Mobile Surgical Unit were already in the area and functioning. On 25 January, 59 Indian Field Ambulance moved to Monywa and again opened a MDS for the 32nd Indian Infantry Brigade. Evacuation of serious cases at this time was by road to the surgical centre at Budalin. Other casualties were kept in Monywa itself. Casualties requiring long hospitalisation and treatment were evacuated by air from the air-strips at Alon and Monywa to rear hospitals. In the further advance of the 32nd Indian Infantry Brigade a company of 59 Indian Field Ambulance was attached to it for functioning as an ADS. These arrangements continued until the time for crossing the river Irrawaddy.

42 Indian Field Ambulance which was functioning with the 100th Indian Infantry Brigade group, when this brigade came under the command of the XXXIII Corps, moved to Khampat (MS 36) Tamu-Kalewa road on 1 September and established the brigade MDS. This unit was responsible for receiving casualties from the forward troops of the brigade and evacuated them to the Corps Medical Centre from an air-strip located near the MDS. It was evident from the nature of the operations being conducted by the 100th Indian Infantry Brigade in this particular phase that it would not be easy to evacuate casualties by ordinary means except by air. Casualties were, therefore, held and treated at this MDS for some time. On the last day of December, the MDS moved forward to Kyigon and later to Budalin. Here it ran a small dispensary as other medical units were already functioning in the area to cater to the casualties of the division. The MDS was closed down on 31 January and moved forward to Allagappa, where it started to function again as a MDS by the first week of February. With the help of bull-dozers provided by the Engineers and of civilian labour, the field ambulance constructed a series of wards and two operating theatres below ground level.

The 80th Indian Infantry Brigade was provided medical cover by 55 Indian Field Ambulance, a company of which was attached to the brigade for establishing an ADS as and when required. The MDS was established in a small village called Thazi near Kalewa, where it functioned for the whole of December. When the brigade advanced to Maukkadaw, the ADS moved from Thazi to Maukkadaw on 4 January and later to Budalin on 14 January. At the latter two places the unit did not function as the other field ambulances in the division were available and already functioning to receive casualties from the 80th Indian Infantry Brigade. On 1 February, the unit arrived at Chaung-U, where it established an MDS for the operations of the 80th Indian Infantry Brigade on the north bank of the river Irrawaddy. 10 Mobile Surgical Unit was not attached to this division for providing surgical cover. The MDS was established here in good accommodation and provided 150 beds. MDS was moved forward again to Allagappa, where it opened up on 19 February.

Medical Arrangements in XXXIII Corps Area

In order to appreciate the Corps arrangements, it would be necessary to give a brief resume of the Corps activities during the period

of its operations, from the crossing of the river Chindwin to the crossing of the river Irrawaddy. It will be remembered that the 2nd British Division broke out from Kalewa bridgehead which it had taken over from the 11th East African Division on 15 December and began a rapid advance along the axis Kalewa-Kaduma-Ye-U-Shwebo. Elements of the 20th Indian Division were already engaged in the advance across the river Chindwin from the north, eventually crossing the 2nd British Division in the Pyingyang area and then advancing in full divisional strength on the Monywa axis. The 19th Indian Division had come under the command of the XXXIII Corps on 24 December at the time of its advance through Pinlebu towards Shwebo. Between sectors of the 20th Indian Division and the 19th Indian Division, the 268th Indian Lorried Brigade with the 9 Light Field Ambulance under its command crossed the wide stretch of land to the Central Burma plain where junction was made with the 19th Indian Division and the 2nd British Division converging on Shwebo. It was fortunate that during this period it was possible with a seriously extended line of communication to cope with all the casualties at the Inbaung Medical Centre. In the case of the 19th Indian Division, the casualties were flown by light aircraft from Kawlin and then by medium aircraft either to hospitals at Imphal or Comilla in India. After the capture of Shwebo the Japanese resistance became more pronounced in all sectors and it became apparent that the establishment of a medical centre somewhere in the Ye-U-Shwebo area was necessary. Great difficulty was being experienced in transporting units owing to virtual impassability of stretches of road east of Kalewa and consequently, a built up medical centre was a doubtful proposition. However, by this time, evacuation by light aircraft had been established. The larger aircraft could not always be depended upon as few of them returned to Comilla which was the normal medical base for these operations. This was because these aircraft were supply planes and were functioning from bases further to the north. Neither was it feasible to hold casualties in the forward areas, because this would inevitably mean more demand for supplies and the formations engaged in active operations could not have their bill completely met.

A medical centre near the air field at Ye-U was slowly built up. The first unit to arrive at the air-strip at Ye-U was 16 Indian CCS which took over responsibility of the MDS of 4 British Field Ambulance of the 2nd British Division, which had up to that time acted as an air evacuation unit for operations in the Shwebo area. The 76 Indian Staging Section was also moved to this area to control evacuation by light aircraft. The 20th Indian Division which was involved in the battle of Monywa had established its own divisional medical centre with the MDSs and surgical teams at Budalin. Evacuation from this sector had been to Inbaung by light aircraft and from there to base hospitals at Imphal and Comilla. When the facilities became available at Ye-U air-strip, evacuation of casualties from the 20th Indian Division was switched over through that air field. Casualties from the 19th Indian Division were also received at the Ye-U air field, from where they were sent to hospitals in India.

By the middle of January, it was decided that Shwebo should

become the Corps maintenance area and that the use of Ye-U should be discontinued. Consequently a site was chosen to the north-east of the town for the next medical centre of the Corps and 16 Indian CCS was transported by road to this centre. The CCS was able to open 200 beds in the area by 17 January. Rapid build-up of this centre was rendered possible by the fly-in of two complete units, the 10 Indian Malaria Forward Treatment Unit and 8 Indian CCS. Unfortunately the former unit which arrived a little bit earlier had to be off loaded at Ye-U as the Shwebo air field was not yet ready. These units were subsequently moved in bullock carts to the Shwebo medical centre. By 17 January, 10 Mobile Field Transfusion Unit had about 300 beds opened and working in the new centre. The Shwebo Medical Centre now began to receive all casualties of the Corps. Casualties from the forward areas were brought in by light aircraft of the 165th Light Air Craft Squadron to an excellently constructed air-strip between the town and the medical centre which was so placed that it was located equidistant from the light air field from the west and the heavy air field from the east. Shwebo centre was an ambitious project and it ultimately comprised of the following units:—

- (1) 8 and 16 Indian CCSs
- (2) 8 and 10 Malaria Forward Treatment Units
- (3) 27 Field Transfusion Unit
- (4) 48 Sub-depot Medical Stores
- (5) Two Mobile X-Ray Units
- (6) One Mobile Neuro-Surgical Unit attached to 16 CCS
- (7) One Field Laboratory
- (8) Corps Psychiatric Centre (75 beds)
- (9) VD Wing of 41 IGH (attached to 16 CCS)
- (10) An Ophthalmic Unit (spectacle supply)
- (11) A Motor Ambulance Section
- (12) Two Indian Staging Sections
- (13) A Dental Centre comprising of—
 - (a) a Dental Unit (IT)
 - (b) a Dental Unit (BT)
 - (c) a Dental Mechanical Unit.

Shwebo was ideally situated to be a medical centre in relation to operations then in progress. There was an easy access to the 19th Indian Division bridgehead at Kyaukmyaung on the Irrawaddy which a rather more complicated light aircraft pick up was at Thapciyaung. The 2nd British Division operations in the Sagaing Hills were easily covered by a 20–30 minutes light aircraft flight. The 20th Indian Division advancing to the river Irrawaddy and to the Irrawaddy confluence was within an easy reach of 40–50 minutes flight from Chaung-U and later Allagappa. The area selected for the medical centre was also a good one about a mile from the centre of Shwebo to the north-east of the town. It was located in very good terrain. But owing to the proximity of military installations it was decided not to use the Geneva Cross and concealment as much as possible was effected.

Much experience was gained at this time in the internal administration of the Corps medical centre. Responsibilities in respect of maintenance of blanket, stretcher dumps, centralization of reception and triage were defined. Medical and nursing staff built up an *esprit de corps* and developed a wider outlook beyond the confines of their own particular units. However, whilst each complete unit had its own administrative staff there was no organization to control the complete organization of a field medical centre. Distribution of mails, collection and distribution of supplies, pooling of transport, canteen and welfare services had to be co-ordinated by a centralised agency. This would have been solved if there had been a senior medical officer in charge of the medical centre.

Organization of evacuation by light aircraft worked smoothly as there was a light aircraft squadron of the United States of America Air Force, completely allotted to the task of evacuating casualties. In respect of evacuation by medium aircraft, arrangements were by no means satisfactory and there was one outstanding problem. No medium aircraft was specifically allotted for casualty evacuation and at first, returning supply aircrafts had to be indiscriminately used. This resulted in gross confusion in the distribution of casualties, and a variety of casualties were received at Chittagong, Comilla and Imphal not in accordance with the distribution schedule of the 14th Army and L of C Command. It was, therefore, desirable that aircraft operating from Comilla alone should be earmarked to fly back casualties the requirements be given a fortnight in advance. Even this arrangement did not work satisfactorily and it was necessary in certain circumstances to evacuate casualties to Chittagong. In spite of every effort, this difficulty in fact was never solved and the fact that casualties had to be frequently held at the air field for long under trying conditions and on occasions returned to medical centre for the night had to be accepted. The inconvenience caused was partially obviated by providing fifty beds at the main air field and making arrangements for cooking meals and providing refreshments, cigarettes, etc. The ultimate arrival in Shwebo of No 7 Casualty Air Evacuation Unit of the Royal Air Force with its large establishment and cooking facilities greatly contributed to the solution of the problem.

By the end of the first week of February, it was clear that Shwebo centre was liable to overcrowding and that another medical centre would be required for the battles of the Irrawaddy, which were now fast approaching. The 19th Indian Division was by this time, well established in the direction towards Mandalay. The 2nd British Division was concentrating westwards of the Mu river while the 20th Indian Division was preparing for a crossing of the river Irrawaddy in the Myinmu area with a medical set up at Allagappa. It was, therefore, decided to open a subsidiary medical centre at Sadaung, to the south-east of Shwebo. At first the only medical unit that could be sent to Sadaung was 7 Indian Malaria Forward Treatment Unit, which moved up from Kalembo by road on 12 February. To it were attached a Mobile Surgical Unit and a Mobile X-ray Unit to deal with surgical cases. A light aircraft strip as well as one capable of accepting Dakotas were available at Sadaung. Subsequently, another CCS, namely, 13 Indian CCS and the MDS of 67 Field Ambulance joined the centre. The site was not really

suitable for a full fledged Corps medical centre. However, for the limited purposes that it was intended it worked satisfactorily. The main achievement during this phase was the whole-hearted acceptance of the principle of a Corps medical centre and this was made possible by the first rate air evacuation facilities provided by the United States of America Air Force. A very much higher rate of "returned to unit" was made possible with consequent ease of the reinforcement problem.

Medical and Transfusion Stores

These were received in accordance with the fixed schedule on the main air field. Unfortunately, medical stores were usually mixed with engineer stores, rations, ordnance equipment and sorting presented a serious problem. Frequently stores were wrongly delivered and on one occasion "cold blood" was delivered to the field supply depot. However, the field transfusion unit eventually managed to sort out medical stores correctly and medical and transfusion stores were sent forward in light aircraft to forward medical units. Light aircraft also ferried hospital patients on their discharge to their respective units.

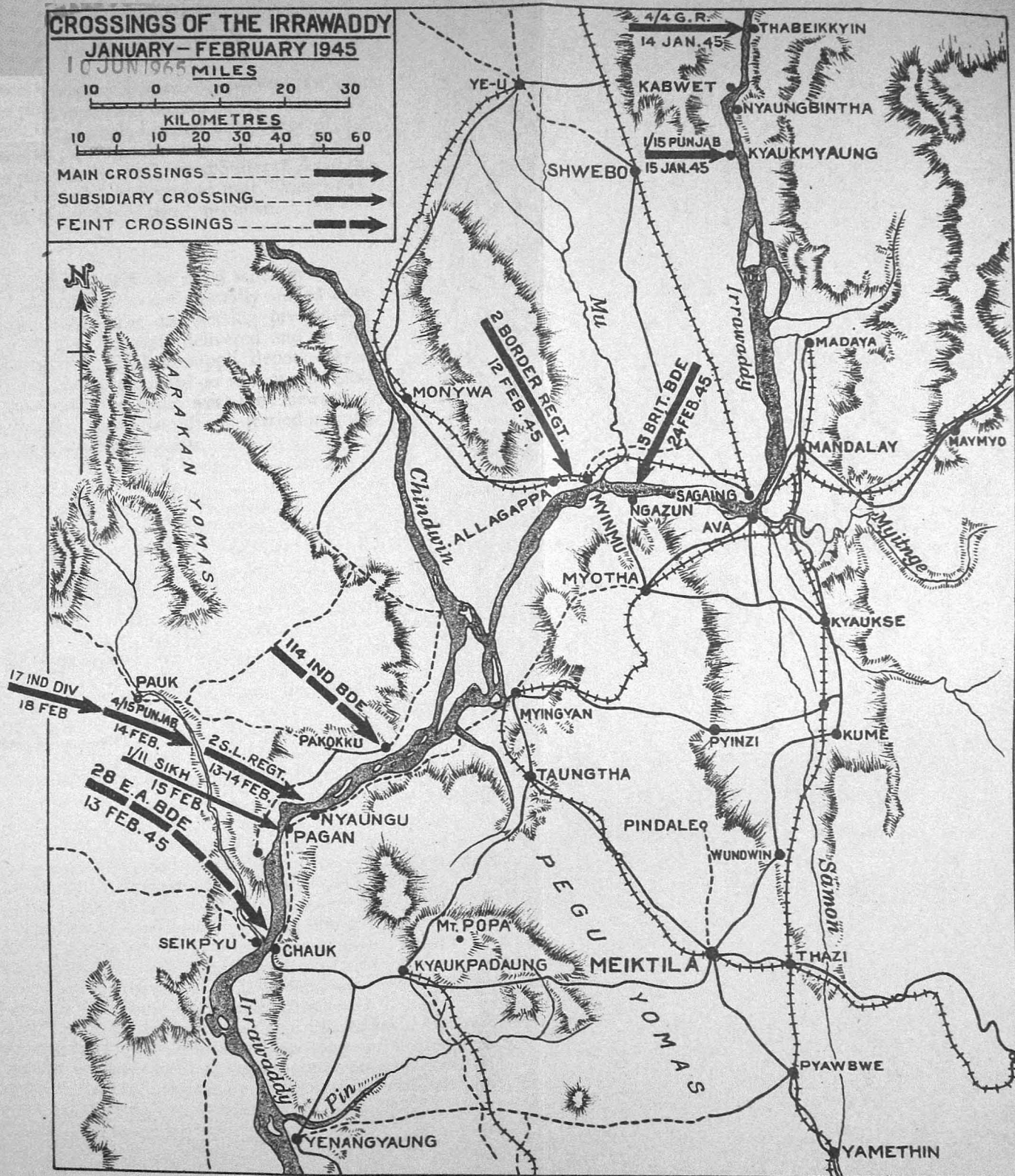
10 JUN 1965 MILES

KILOMETRES

0 0 10 20 30 40 50 60

SUBSIDIARY CROSSING

FEINT CROSSINGS



CHAPTER XXIV

Crossing of the Irrawaddy

By the middle of February 1945, the IV and XXXIII Corps were poised for the major offensive across the river Irrawaddy on a front of about 150 miles. The opposed crossing of a big river like the Irrawaddy demanded good organization and exhaustive preparations. That this river was a formidable obstacle, whose passage would be strongly contested, was well recognised.

Operations of IV Corps

It would be remembered that the original plan of advance into Burma was radically altered in December 1944, to switch the IV Corps to the right flank of the army in order to make a surprise crossing of the river Irrawaddy near Pakokku. The IV Corps was to advance with all speed down the Kabaw and the Myittha valleys and cross the Irrawaddy early in February and capture Meiktila—an important strategic road and rail centre on the Japanese L of C—and then with the help of the XXXIII Corps to destroy the Japanese forces contained between the two Corps. Before leaving the left flank of the Army, IV Corps handed over command of 19th Indian Division and the 268th Indian Lorried Brigade to XXXIII Corps on 26 December. The main formations under command of the IV Corps after this change-over were:—

The 7th Indian Division
The 255th Tank Brigade Group
The 28th East African Brigade, and
The Lushai Brigade.

The 17th Indian Division which was reorganizing in Ranchi in India was provisionally allotted to the Corps and was to be moved in, if possible by air as soon as it was ready.

The distance to be covered by the IV Corps as a result of this change of flanks was about 325 miles from Tamu to Pakokku. The first 110 miles to Kalemio were to be over a fair weather road which was already the L of C of the XXXIII Corps. Southwards from Kalemio there was only a fair weather road which required considerable improvement and bridging before it could handle the traffic involved. Along this axis was deployed the Lushia Brigade which was operating in the Myittha valley with the object of capturing Gangaw about 110 miles south of Kalemio. The formations under command of the Corps were spread over a vast area. The 7th Indian Division with its very limited motor transport was stretched between Imphal and Tonhe. The 28th East African Brigade which was concentrating in Imphal had a more liberal transport establishment. The tank Brigade was also in the Imphal plain. If the Corps was to reach the Irrawaddy and Meiktila in time there was hardly a day to be lost.

It was necessary if surprise was to be achieved, for the new deployment to be executed with all speed. The whole operation including and up to the capture of Meiktila was given the code-name of Multivite and was divided into four phases:

Vitamin A: The capture of Pakokku by the 7th Indian Division having passed through the Lushai Brigade. The 28th East African Brigade and supporting troops were to turn southwards to feint a crossing of the river Irrawaddy in the region of Chauk as part of the deception scheme.

Vitamin B: The establishment by the 7th Indian Division of a Corps bridgehead over the Irrawaddy in the Pakokku-Pagan area. The target date for this was mid February.

Vitamin C: The concentration of the 17th Division, the 255th Tank Brigade and the Corps artillery on the east bank of the river Irrawaddy.

Vitamin D: A lightning overland thrust assisted if possible by an airborne build-up to seize Meiktila-Thazi area as soon as possible after mid February, followed by the liquidation of any Japanese forces between IV and XXXIII Corps.

In the event the provisional plan remained virtually unaltered and the timings proved remarkably accurate. The only modifications were the earlier relief of the Lushai Brigade and the use of only 17th Indian Division for the fourth phase instead of both 7th and 17th Indian Division as the provisional plan envisaged.

An elaborate deception plan to mislead or delay any Japanese discovery of the Fourteenth Army's major regrouping was put into effect. A very detailed signal deception scheme purporting to show the continued presence of IV Corps on the left flank of the army was organized. This involved the IV Corps leaving a complete dummy Headquarters in the north and observing wireless silence in advancing south for as long as possible despite the great difficulties involved. The aim of all these was to "sell" the Japanese that the intention was to effect a major crossing of the river Irrawaddy at Pakokku. In addition, the East African Brigade moving south, was to give the impression that a sizable force was directed on Yenangyaung where the oil-fields were located.

The deployment of the Corps started at once. The 7th Indian Division was withdrawn from the north of Tamu and was instructed to concentrate in the Tamu-Hesin area, prior to moving south. The 28th East African Brigade was ordered to move south with all speed to back up the Lushai Brigade and relieve it as soon as possible. The Tank Brigade was to concentrate in the Witok area just south of Tamu. The road Kalemmyo-Pakokku was to be made passable throughout for transported tanks by 31 January. All engineer resources were allotted for this important task.

While the concentration of the 17th Indian Division was going on, the Lushai Brigade was continuing its advance to the Gangaw area. In the Gangaw area itself the main Japanese defensive positions were located in or near Myaukkon. A heavy airstrike was made at this point on 24 December but it failed to dislodge the Japanese. Fighting continued

in this area without respite during the succeeding days. Meanwhile the 28th East African Brigade and the 7th Indian Division were fast moving down the Gangaw valley by transport and marching. The East African Brigade commenced its move on 29 December and by 4 January reached Myintha, 30 miles north of Gangaw. The advanced elements reached the Gangaw air-strip by 8 January and the relief of the Lushai Brigade began. The 7th Indian Division commenced its move on the 28 December and moved through the staging area at Manipur river crossing and the advanced elements reached Kan by 4 January.

Meanwhile, the fight for Myaukkon continued. A very heavy air-strike, now termed 'Earth-quake', was made on Myaukkon on 10 January. The Japanese were completely shaken by this intensive form of bombing and hastily withdrew and Myaukkon-Gangaw area was occupied without difficulty. The Lushai Brigade was then withdrawn to Kan and later flown out to India.

On 12 January, the 7th Indian Division took over operational control in the Gangaw area and was given the task of pushing on vigorously to secure a bridgehead over the Irrawaddy, somewhere in the Pakokku area, through which the 17th Indian Division was to advance. The division's immediate task was to cut off and encircle as many Japanese troops as possible and to form a mobile column to carry out the pursuit to the river Irrawaddy and prevent the Japanese from crossing the Irrawaddy. For this purpose it was necessary to seize Pauk area as rapidly as possible, at any rate not later than 1 February and construct a heavy air-strip there. The date for the establishment of the bridgehead across the Irrawaddy could not be delayed beyond 15 February. The 17th Indian Division had already moved into Assam from India and was scheduled to concentrate at Pauk by 23 February. The 28th East African Brigade was entrusted with the task of clearing up the Gangaw area and then to continue the advance along the axis of the main road. The 89th Indian Infantry Brigade was to carry out a deep encircling movement east of the road.

The 114th Indian Infantry Brigade was instructed to follow the advance of the 28th East African Brigade and to carry out small out-flanking attacks to facilitate the latter's advance. No major resistance from the retreating Japanese was anticipated before the river Irrawaddy was reached. On 23 January Tilin was occupied by the 28th East African Brigade. Meanwhile, the 89th Indian Infantry Brigade made a wide outflanking movement on the east and reached the main road between Tilin and Pauk on 25 January having met no Japanese resistance at all. The third brigade of the division, the 33rd Indian Infantry Brigade, had completed its concentration at Zahaw just north of Gangaw on 23 January. The brigade remained in the area training in river crossing for which it had been chosen as the assault brigade.

The 28th East African Brigade, continuing their advance from Tilin, relieved the 89th Indian Infantry Brigade at Yebyu on the Tilin-Pauk road on 26 January. The 89th Indian Infantry Brigade now took up the advance and on the following day Pauk was occupied. The troops of the 89th Indian Infantry Brigade proceeding beyond Pauk,

reached Pyinchaung by 29 January. The 114th Indian Infantry Brigade was now brought forward to advance to Pakokku and to clear the west bank of the Irrawaddy between Pakokku and Myitche. The main Corps Deception Scheme included a feint crossing of the river Irrawaddy at Chauk.

The 28th East African Brigade, with a troop of armoured cars and other supporting troops, advanced south from the Pauk-Pakokku road on 3 February with the object of capturing Seikpyu on the west bank of the Irrawaddy opposite Chauk.

Meanwhile, the troops of the 89th Indian Infantry Brigade, after reaching Pyinchaung, turned south and on 3 February entered Myitche on the Irrawaddy where the main crossing was to be made. The 114th Indian Infantry Brigade now took up the advance to Pakokku which was reached by 13 February. The west bank of the Irrawaddy was now clear from five miles of south of Myitche to the western outskirts of Pakokku. Earlier on 10 February, the 28th East African Brigade captured Seikpyu without encountering much opposition. The stage was now set for the crossing of the river Irrawaddy.

The 17th Indian Division had returned from India and was being hurriedly reorganized for the dash to Meiktila. Two of its brigades, were fully motorised whilst a third brigade was equipped as an airborne formation. The concentration of the 48th and the 63rd Indian Infantry Brigades as well as the 255th Indian Tank Brigade with whom these brigades were to co-operate, was completed on 18 February. The IV Corps now was almost fully concentrated in the dry belt with the Japanese no longer enjoying the advantages of cover in the jungle. Once the passage of Irrawaddy could be forced the country beyond was admirably suited to the deployment of armour.

The crossing of the river Irrawaddy

It will be remembered that the river Irrawaddy had already been crossed by the 19th Indian Division which established bridgeheads at Thabeikkyin and at Kyaukmyaung, about 24 miles apart, north of Mandalay. The distance between this bridgehead and the projected IV Corps crossing near Pakokku was about 160 miles. Between the two bridgeheads of the 19th Indian Division the river ran through a gorge and was comparatively narrow being only about 500 yards wide. The primary object of this crossing was to divert attention from the projected IV Corps crossing near Pakokku. In view of the armoured thrust which was being planned on the IV Corps sector, it was advisable that crossings should be made simultaneously. The 20th Division from the XXXIII Corps and the 7th Division from the IV Corps were instructed to undertake the river crossing. The Japanese were completely deceived as to the real intentions. They assumed that the 19th Division was an advanced guard of the IV Corps and decided to liquidate the bridgehead before it could be consolidated. Troops were brought up to reinforce the attacking Japanese formations. The sudden diversion of two Chinese divisions from the NCAC front gave the Japanese ample reinforcements to be diverted against the bridgeheads of the 19th Indian Division. This was

unfortunate but could hardly have been helped. Preceded by heavy artillery bombardment the Japanese hurled themselves against the bridgehead night after night for nearly a month but the bridgehead was not only held but expanded even in spite of the heavy losses entailed.

Before proceeding to describe the operations it would serve to clarify the picture if a resume of the crossings which took place is given in brief outline. Four crossings of the Irrawaddy were undertaken and briefly they were as follows:—

- (1) The 19th Indian Division crossed north of Mandalay at Thabeik-kyin and Kyaukyang, as already described. The division then advanced south shifting its bridgehead to Singu.
- (2) The 20th Division crossed near Allagappa west of Mandalay in the Myinmu area on 12 February with the object of advancing east along the south bank of the river towards Mandalay.
- (3) The 2nd British Division crossed the river Irrawaddy at Ngazum—a village between Mandalay and the 20th Division bridgehead on 24 February.
- (4) The 7th Indian Division crossed the river at Nyaungu to the west of Pakokku between 13 and 15 February.

Crossing of the 20th Division

The 20th Division crossed the river Irrawaddy south of the village of Allagappa. The river here is about 1,500 yards wide. The crossing was covered by high hills to the south-east and hence was not considered to be a suitable site. Consequently the Japanese had only lightly defended the area. The 100th Indian Infantry Brigade crossed the river on the night of 12/13 February and by the following night a bridgehead, six miles wide by two miles deep had been established. The Japanese reacted swiftly to this advance and made one of their rare air attacks which caused considerable damage to the river crossing equipment which was already deficient. The damaged boats were however replaced or repaired and the crossings continued. By 18 February the bridgehead was fairly firm.

The crossing of the Irrawaddy (IV Corps)

Nyaungu between Chauk and Pakokku was selected as a crossing site. It was for topographical reasons the most unsuitable place for crossing and was, therefore, only held lightly by the Japanese. The diversionary feints at Chauk and at Pakokku had completely misled the Japanese as to the real site of the crossing and they had moved more troops to both these areas leaving Nyaungu practically without any defences.

The plan of crossing the Irrawaddy in this sector was as follows:—

Phase I—One battalion of the 33rd Brigade was to carry out an assault crossing on the night of 13/14 February and to capture suitable beaches north-east of Nyaungu.

Phase II—Remainder of the brigade to reinforce this bridgehead with a view to developing an attack on Nyaungu from this high-ground.

Phase III—Capture of Nyaungu itself and a beach on the east bank at the shortest crossing place..

Phase IV—The expansion of the bridgehead to enable the remainder of the IV Corps to pass through.

By the evening of 12 February all the troops concerned with the crossing were in the concentration areas and final arrangements were being made. D-Day for crossing was fixed for 14 February. The 33rd Indian Infantry Brigade was detailed to make the crossings. Feint crossings were made by the troops north and south of Nyaungu before the D-Day in order to confuse the Japanese.

The crossing of the river Irrawaddy at Nyaungu was the longest opposed river crossing attempted in any theatre of war. The river at this point was about 2,000 yards wide and was fairly fast flowing. The southern bank of the river was cliff faced, intersected by Chaungs rising at places over a hundred feet, while the northern bank of the river, from which the assault was to be launched was a flat stretch of paddy with very little cover. The crossing itself was to be a diagonal one, about a mile to the far bank. The first group of assault forces commenced the crossing at 0345 hours on 14 February in rowing boats and reached the objective on the southern bank of the river an hour later. Everything was now set for the main assault and the troops moved towards the waiting boats. From this moment everything began to go wrong. The launching of the boats proved to be more difficult than anticipated. The outboard motors failed to start and some were found to be unserviceable when loaded. As a result of these difficulties the assault wave which was scheduled to land on the far bank at 0535 hours was still approaching their objectives at 0610 hours, well after the first light. All the boats except two were being rowed and many were in tow in full view of the far bank. A good many of the boats were out of control and a few drifting helplessly fast down stream past the Japanese positions. There was a heavy firing from the far bank and considerable casualties resulted. Boats began to return—quite a few men were trying to swim back to the north bank. The Japanese positions were silenced by tanks and aerial bombardment.

The first crossing had failed and it was now decided to put across another battalion of the 33rd Indian Infantry Brigade (4/15 Punjab). At 0935 hours, the leading companies of this group moved out under air and ground protection and managed to reach their objective. More and more boats followed, heavily laden with troops, until they were going both ways in almost continuous stream. By night fall on 14 February all objectives had been secured and the 33rd Indian Infantry Brigade was across the river. During the following day, equipment and supplies were sent across the river in an unending stream. By 16 February Nyaungu was cleared and the small Japanese force left to guard the place had been liquidated. The bridgehead was now over 6,000 yards broad and 4,000 yards deep and was fairly and firmly held. Corps intention was that once the bridgehead was firmly established, troops of the 17th Indian Division would cross over and advance to Meiktila as fast as possible. In view of the delay at the crossing owing to

paucity of boats at Nyaungu, it was decided not to wait for the 17th Indian Division to establish itself completely on the south bank of the river before it moved off to its objective. The 17th Indian Division started crossing the river Irrawaddy on 17 February and began to move forward. The bridgehead was now firm and the road to Meiktila lay ahead.

THRUST TO MEIKTILA

It will be convenient to describe the thrust to Meiktila by the 17th Indian Division and the 255th Indian Tank Brigade in its entirety before proceeding to describe the operations in other sectors. The capture of Meiktila was to be undertaken by the 17th Indian Division and the 255th Indian Tank Brigade. Operations for the thrust were planned into six different phases:—

Phase I—The crossing of the river Irrawaddy and capture Ngathayauk and exploitation towards Seiktein and Welaung.

Phase II—Capture of Mahlaing and sealing or capture of Taungtha and concentration of the division in Mahlaying.

Phase III—Capture of air-strip at or near Meiktila for the flying in of the Brigade (99th Indian Infantry Brigade) of the 17th Indian Division.

Phase IV—Isolation of Meiktila.

Phase V—Capture of Meiktila.

Phase VI—Capture of Thazi.

The crossing of the river commenced on 18 February and was completed by 21 February. The crossing went through smoothly and it was decided that no time would be wasted in concentrating the whole division before moving forward. Reconnaissance parties started immediately probing forward as soon as the first troops were across. The first firm base to be secured outside the bridgehead was Nyaungyidaung, which was secured by the 48th Brigade on 20 February. On 21 February, the real advance began, with the 48th Indian Infantry Brigade leading the axis of the main road to Ngathayauk with the tanks in close support and the tank brigade on the axis, south of the road through Wetlu. The first opposition was met at Seywa, where a Japanese group put up some resistance. The road junction of Ngathayauk was reported clear on the evening of 21 February. Three routes diverged from this point the southern to Seiktein and the middle to Welaung and the northern to Kamye. It was decided to move the 63rd Indian Infantry Brigade with supporting troops on the Seiktein axis with the remainder of the division on the northern route to Kamye. On 22 February, the southern column set out for Seiktein. There was fanatical resistance from the Japanese in the region of Oyin, where heavy fighting continued most of the day. The column moving along the northern route to Kamye reached the place on 23 February and met with only slight opposition and on the same day the 63rd Indian Infantry Brigade after overcoming stiff opposition reached Welaung the same day. The advance to Taungtha was now taken up and the 48th Indian Infantry Brigade approaching from the south-west reached the village on 24 February.

The 63rd Indian Infantry Brigade advancing from Welaung reached Taungtha late in the same afternoon after having been delayed by considerable opposition in the many villages that it passed through. The division now harboured at Myngan, a few miles beyond Taungtha and efforts were made to clear the country-side of Japanese stragglers. On 25 February, 48th Indian Infantry Brigade remained behind to collect a supply drop, whilst the rest of the force pushed on with all speed to Mahlaing area. The tank brigade which was the spearhead of the advance reached Thabutkon (13 miles short of Meiktila) air-strip, where work was immediately taken up to enable the air-strip to take heavy planes.

The divisional headquarters and the 48th Indian Infantry Brigade remained at Sadaw, about 16 miles from Meiktila. On 27 February, whilst the 63rd Indian Infantry Brigade, with supporting troops advanced to Meiktila, the first serious opposition was met at MS 8½ where a bridge had been demolished and the road mined. An outflanking attack north of the road succeeded in establishing a road block behind the Japanese. The tanks then smashed their way both frontally and from the north overrunning the Japanese positions. The troops harboured at MS 5 and patrols sent forward reported that the Japanese were blowing up supply dumps.

The plan for the capture of Meiktila was as follows:—

255th Indian Tank Brigade was to attack from the east; 48th Indian Infantry Brigade from the north along the axis of the main road to Mahlaing and the 63rd Indian Infantry Brigade from the west. On 28 February, the 63rd Indian Infantry Brigade leaving transport behind moved by march route to Antu. The 255th Indian Tank Brigade with two infantry battalions moved first to the concentration area, north-west of Meiktila, and then proceeded to the south and cut the road to Thazi and Pyawbwe and captured the eastern shore of the southern lake.

Meanwhile, the 48th Indian Infantry Brigade had closed in from the north and encountered one of the strongest Japanese oppositions in a monastery in the northern edge of the town.

The battle for Meiktila commenced on 1 March with heavy artillery and air strikes. The 255th Indian Tank Brigade attacked Meiktila from the east and simultaneously, the 48th Indian Infantry Brigade closed in from the north. Gradually the Allied forces closed in and by the evening had gained possession of a considerable area. During the night many Japanese troops infiltrated back into the previously evacuated positions. On 2 March, both brigades were again in action with tank, artillery and air support and slowly the Japanese were thrust back bunker by bunker into the extreme south end of Meiktila; and the whole of Meiktila was cleared. The following day, operations to clear up Meiktila east were undertaken against stubborn resistance. By the evening of 3 March, the whole of Meiktila was in Allied hands. Meiktila had been captured but it had yet to be held.

On 4 and 5 March steps were taken to clear the whole area of snipers and concealed Japanese positions. The 63rd Indian Infantry

Brigade was left in Meiktila for clearing the town whilst columns of all arms were despatched along the roads radiating from Meiktila. The important road and railway junction of Thazi was one of the objectives. In all sectors Japanese columns and reinforcements and supplies heading for Meiktila were encountered. The Japanese, caught on the wrong foot were engaged by aircraft, tanks and infantry and thrown into utter confusion.

The last crossing of the Irrawaddy was made by the 2nd British Division at Ngazun, some ten miles to the east of the bridgehead of the 20th Indian Division on the night of 24/25 February. The crossings had to be made diagonally to avoid sand-banks but this resulted in lengthening the distance of crossings. It was planned to land on three beaches on the far bank simultaneously, two of which A and B lay to the west of the village Ngazun whilst the third beach, C was on a large island to the north of the island. The landing on beach C was fired on but the troops managed to land and rush the Japanese positions. Subsequent landings on beaches C and A were held up due to heavy fire and it looked as though the crossing might fail, but the troops detailed to land on beach B made a gallant effort and established themselves against heavy resistance. Immediate efforts were made to consolidate the bridgehead and by the morning of 25 February, troops from two brigades were across the river and the bridgehead was being steadily expanded. Ngazun was itself captured the following day.

With the four crossings described above the Fourteenth Army had successfully managed to establish the major part of its striking formations across the river Irrawaddy and the stage was set for the battle of Central Burma.

Medical cover for the 7th Indian Division

Medical units of the 7th Indian Division were 44, 54 and 66 Indian Field Ambulances and 32 Indian Field Hygiene Section. One Company each of the field ambulances was brigaded to attend to the brigade casualties, whilst the field hygiene section looked after the hygiene problems of the divisional area. The 7th Indian Division and the 28th East African Brigade formed the main formations of the IV Corps at this period. The 28th East African Brigade was already operating in the Kabaw Valley and medical cover for it was provided by one company of the 64th Indian Field Ambulance.

Mention has already been made of the major change in the plan of operations in Central Burma whose main feature was the switching of the IV Corps to the right flank of Arakan for advance to Meiktila. The IV Corps moved to Taukkyan on the river Myittha on 25 December 1944. Here a regrouping of medical units took place and on 12 January those allotted to the IV Corps arrived in the area. These were 14 and 19 Indian CCSs and 4 and 9 IMFTUs. By the middle of January, 19 CCS and 9 IMFTU opened at Taukkyan. At this period only the Lushai Brigade was in action and its casualties were being dealt with by the Corps Medical Centre of the XXXIII Corps at Inbaung. The 7th Indian Division commenced the move to the south as part of the general

corps movement and established a divisional area at Tilin. All the MDSs of the field ambulance were grouped in the divisional administrative area and casualties from the forward brigades were evacuated to the MDS.

The move forward from Kan of the 7th Indian Division commenced in the third week of January 1945. One company of 54 Indian Field Ambulance moved with 114th Brigade on 16 January to Tilin area. The MDS of 54 Field Ambulance continued to function at Kan until 31 January when it closed and moved forward to Pauk with the administration base. Another company of the field ambulance moved with the 33rd Indian Infantry Brigade. The MDS itself arrived at Pauk on 2 February and moved to Khandla on 10 February. The 44 Indian Field Ambulance was also functioning at Kan before the Corps Headquarters arrived there. This unit also moved forward to Pauk on 2 February. The divisional medical administration area was now located at Pauk and the units continued to function in this area. The 66 Indian Field Ambulance attached to the 89th Indian Infantry Brigade also arrived at Kan on 16 January and continued to function in this area until 28 January when it moved to Kyin, where it started functioning on 30 January. The 89th Indian Infantry Brigade was now operating in a very inaccessible terrain and casualties were evacuated to Kyin on mules. With the forward move of the brigades, the 66 Indian Field Ambulance moved to Myitche on 10 February.

Medical cover for the 17th Indian Division

It will be remembered that the establishment of this division had been changed and two brigades were fully mechanised and made and the third placed on an air borne basis. The 23 Indian Field Ambulance was attached to the 63rd Indian Infantry Brigade and arrived at MS 4½ on Pauk-Pakokku road by 11 February. One mobile surgical unit was attached to 23 Field Ambulance and the field ambulance itself was reorganised on a light scale of transport.

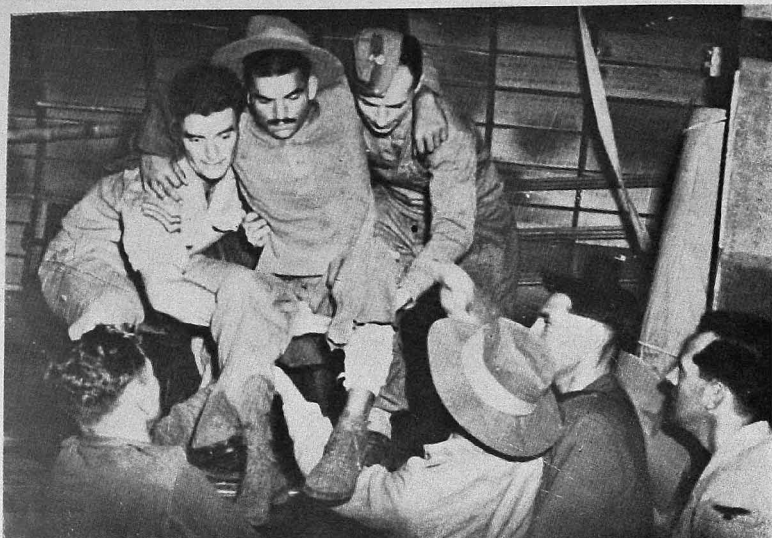
Corps medical arrangements

The Corps headquarters, as already mentioned, moved to Kan in early January. Kan was the first fully developed Corps headquarters during the advance and the first experience the Corps had of establishing a Corps medical centre and having light planes based close to the CCS for the evacuation of casualties. The site for the medical centre at Kan was good, being very close to the light air-strip not so far from the air field for medium aircraft. The light section of 14 CCS moved to Kan on 11 January and by the 14th, sufficient part of the CCS and 4 IMFTU were in position and had commenced taking patients. The troops had commenced to move forward but only one mobile surgical unit had so far reached the Corps area. This was sent with MDS 66 Field Ambulance, as mentioned earlier. Fortunately, the number of casualties was low and the surgical section of the CCS was able to cope with these admissions. Patients from the 28th East African Brigade had considerable difficulty owing to language differences and a section of the 111th East African General Hospital was attached



Evacuation of casualties, Burma, May 1945.





Evacuation of wounded from Central Burma.



to the medical centre to attend to these patients. The Corps Medical Centre admitted on an average about 30-40 casualties a day which were being brought by light planes from the forward areas. About the same number was evacuated by medium aircraft to Comilla.

The 19 Indian CCS and 9 IMFTU which had remained in the rear area, were moved forward to the Kan centre where they remained closed. The next air head was sited at Sinthe, two miles beyond Pauk, and as soon as the Japanese were cleared from the area, work began on this air field. Due to the very bad road from Kan to Sinthe and lack of motor transport it was decided to move 19 Indian CCS and 9 IMFTU to the area by air. On 7 February the light section of CCS was flown into Sinthe. Simultaneously, the light planes squadron began to transfer their base to Sinthe and within twenty-four hours casualties were being admitted to the new centre. The fly-in of the whole medical centre followed a phased programme and was completed by 15 February.

Medical cover for the crossing of the river Irrawaddy

20th Indian Division: Medical cover for the 20th Indian Division was provided by the 42, 55 and 59 Indian Field Ambulances and 10 Indian Mobile Surgical Unit. The RAPs were established on the southern bank of the river immediately after crossing. The casualties which were brought to the RAPs by regimental stretcher bearers were evacuated across the river to a car post at Myaung village, south of Allagappa. From there the casualties were conveyed to the ADS and from the ADS they were further evacuated to MDS 42 Indian Field Ambulance at Allagappa. 10 Indian Mobile Surgical Unit was also located in this area and formed together with the MDS, the divisional surgical centre. In the early stages, evacuation on the southern bank of the river was by stretcher bearers only but on the northern side motor ambulances were used for conveying casualties. By 14 February, a well defined perimeter had been established and the ADS 59 Indian Field Ambulance moved into this area.

7th Indian Division: The 33rd Indian Infantry Brigade made first crossing of the river Irrawaddy in the IV Corps area at Nyaungu. The 44 Indian Field Ambulance established a light MDS in the divisional medical area at MS 8 on the Pauk-Pakokku road. One company of the field ambulance was attached to the brigade to provide medical cover for the crossing. When the first assault wave failed to land on the opposite side a light ADS was hastily established by this company and reinforcements were called for from the headquarters of the field ambulance. Additional field ambulance cars, stretchers and blankets were provided to this ADS to meet the rush of casualties. After a heavy air strike crossing commenced again almost unopposed and, by 1600 on 14 February, the ADS had cleared up all casualties and moved up to the river. A car post was established at the site of the ADS by a detachment from the 54 Field Ambulance. The second company of the 54 Field Ambulance also crossed the river on 14 February and ambulance cars and jeep ambulances began to be ferried over. The evacuation of casualties now continued without any opposition. The

casualties were evacuated in three phases (1) from unit RAPs by stretcher bearers to the ADS (2) from the ADS by returning empty river craft (3) evacuation to MDS 44 Field Ambulance. With the crossing of the whole division the field ambulances also crossed over. In the early stages there was no light air-strip on the east bank of the river, hence No 14 Mobile Surgical Unit was sent across the river to form with the MDS 54 Field Ambulance an advanced divisional surgical centre. The second mobile surgical unit was kept at 19 Indian CCS at Sinthe to be sent forward when required. These medical arrangements continued in force until the end of the month. Both 44 and 54 Indian Field Ambulances were functioning at Nyaungu, evacuating cases by light aircraft to the Corps medical centre at Sinthe.

Medical cover 17th Indian Division: Meanwhile, the 17th Indian Division (48th and 63rd Indian Infantry Brigades) with the 255th Indian Tank Brigade was poised for attack on Meiktila. This force commenced to cross the river Irrawaddy at Nyaungu on 18 February. The field ambulances providing medical cover for the 17th Indian Division were 23 and 37 Indian Field Ambulances.

23 Indian Field Ambulance crossed the river Irrawaddy on 21 February. 8 Mobile Surgical Unit also joined the field ambulance. These moved with the 63rd Indian Infantry Brigade through Ngathayauk on 22 February and established a medical post to the south of Oyin. Casualties were carried forward in the advance through Welaung to Taungtha which was reached on 24 February. Meanwhile the 48th Indian Infantry Brigade with divisional headquarters had captured Kamye and was advancing towards Taungtha, which was reached by noon on 24 February. The 37 Indian Field Ambulance, moving in support of the 48th Indian Infantry Brigade, had opened a MDS at Kamye on 22 February. A light air-strip was constructed here from which casualties were evacuated by light aircraft. 23 Indian Field Ambulance opened a MDS close to Taungtha on 24 February and 8 Mobile Surgical Unit joined up at this MDS. All casualties brought forward were evacuated by ambulance cars to the air-strip at Kamye from where they were conveyed by light aircraft to the Corps medical area.

The 63rd Indian Infantry Brigade now took up the lead and reached Mahlaing by the evening of 26 February. 23 Indian Field Ambulance covered the advance. Casualties were carried forward and evacuated by light aircraft from an air-strip at Mahlaing. The 255th Tank Brigade, the spearhead of the advance to Meiktila had reached the air field at Thabutkon (13 miles short of Meiktila) by 26 February. The advance of the 63rd Indian Infantry Brigade was resumed on 27 February. 23 Indian Field Ambulance now moved forward to the air-strip at Thabutkon. A medical station was opened there with 8 Mobile Surgical Unit to evacuate casualties to the rear and also to afford medical cover for the 99th Indian Infantry Brigade whose fly-in to Thabutkon commenced on the afternoon of 27 February.

CHAPTER XXV

The Battles of Meiktila and Mandalay

OPERATIONS TO THE EAST OF IRRAWADDY—14 FEBRUARY TO 6 MARCH

During this period the 28th East African Brigade was advancing down the west bank of the river Irrawaddy after the capture of Seikpyu towards Lanywa. Patrols reported that this village was strongly held and the brigade was harassed in its advance. On 16 February the Japanese made a heavy counter-attack on the forward positions of the brigade and forced it to withdraw. Three days later another attack was launched and the forward positions of the brigade were again overrun. Owing to the danger to the brigade administrative area and the threat to its right flank, the brigade was forced to withdraw to Letse. On 23 February, the East African Brigade was reinforced by a battalion of the 114th Indian Infantry Brigade and an armoured group for an early advance.

Meanwhile, the 7th Indian Division continued the enlargement of the bridgehead area with the 33rd Indian Infantry Brigade advancing east along the left bank of the river Irrawaddy, and the 89th Indian Infantry Brigade moving south from the area of Pagan. On 23 February, the 114th Indian Infantry Brigade (less one battalion) crossed the river and took over the protection of the bridgehead area, relieving the 33rd Indian Infantry Brigade, which was to move north-west on to Myingyan. The advance to the south of the 89th Indian Infantry Brigade continued against stubborn opposition and made tolerable headway. In the sector of the 33rd Indian Infantry Brigade the advanced troops entered Palin on 23 February. A few more Japanese positions to the south of Myingyan were captured. It was then decided to advance on Myingyan along (1) the river-road and (2) the road from Kamye. The advance proceeded fairly rapidly and the northern army reached the point about 16 miles from Myingyan by 2 March, but the force advancing from Kamye ran into difficulties and met stiffer opposition. Stubborn resistance continued in the village of Eingyadaung for a few days, but the village was finally taken on 5 March and the road junction captured the following day. Meanwhile events were developing in other areas of the IV Corps which necessitated the temporary suspension of the advance to Myingyan.

The capture of Meiktila and the annihilation of its garrison was a magnificent feat of arms. It sealed the fate of the Japanese army in Central Burma. The Japanese, even though misled as to the real dispositions of the Fourteenth Army, were quick to react to the new threat that developed in their vital communication area. Their earlier plan to concentrate all resources against the XXXIII Corps in the Mandalay area was quickly scuttled. The reinforcements which were by now moving to the Mandalay area were quickly diverted to Meiktila. This plan involved considerable movement of formations and change of plans, but they were pursued with amazing rapidity and completed for all practical purposes, which was surprising in view of the bad state of

Japanese communications and the Allied air superiority. The main plan for the Japanese counter-offensive to recapture Meiktila had three main objectives:—

- (1) The liquidation of the bridgehead of Nyaungu by an attack from the west, co-ordinated by an assault from the south and the east.
- (2) The capture of Taungtha in the middle of the L of C from the bridgehead to Meiktila, and
- (3) The recapture of Meiktila itself, especially the air-strip on which the supply to the formations of the Corps in Meiktila depended.

By closing the bridgehead the Japanese could effectively isolate Meiktila and therefore this plan was pursued with all vigour.

Meanwhile, the troops in Meiktila by constant and vigorous action against Japanese concentration never lost the initiative and effectively prevented the Japanese from attacking Meiktila in force or from retreating south from the sector of the XXXIII Corps. The increasing reinforcements that the Japanese were able to bring against Meiktila necessitated the further reinforcement of the IV Corps.

The 5th Indian Division which had been withdrawn after its operations on the Tiddim road was now ordered to move forward with all speed and, in early March, it had reached Pauk. The 9th Indian Infantry Brigade of the 5th Indian Division was flown to Meiktila on 15 March to take over the defence of the air-strip. The remainder of the division was moved up to the Nyaungu area from Monywa prior to concentrating further forward at Kamye.

The Japanese attack on the bridgehead was badly mistimed and resulted in total failure. The 28th East African Brigade had been reinforced and was able to repulse all attacks from the south and thus liquidate the threat to the bridgehead. Early in March a strong Japanese force seized Taungtha and the hills dominating to the north-east and south-east. The 33rd Indian Infantry Brigade was instructed to clear these features and the 5th Indian Division which had begun to concentrate in Nyaungu was to move forward as rapidly as possible.

Meanwhile, in Meiktila itself, attacks and counter-attacks were following with amazing rapidity. Columns were fanning out to seek and destroy Japanese forces and to prevent their effective concentration. The Japanese, however, managed to penetrate to the airfield on the night of 15/16 March, and actually reached the north-west corner of the air-strip and dug in. This was uncomfortable as the entire force depended on air supply and no planes could land safely. However, air-lift continued on a limited scale paying scant respect to the Japanese attacks on the airfield. Heavy fighting ensued in this area and the Japanese were ejected from their positions, but their guns still dominated the air-strip and made landing of supplies a hazardous task.

Then followed a week of intensive fighting for the air-strip. The Japanese had dug-in in the north in broken country which was almost impassable for tanks and the infantry had to clear them out. This was achieved against the most determined opposition with the magnificent

support of the air force. Every sector of the Meiktila defences was attacked in turn and everywhere the Japanese were turned back with heavy losses. By the end of March the Japanese had built a strong defensive position in the Myindawgan lake area and to the south, which was almost their last hold in the area. All attempts to break this line had proved unsuccessful. The final attack was carried out by the 63rd Brigade with tanks from the west and north-west and by the 99th Indian Infantry Brigade from the south and south-east. Preceded by a heavy air bombardment the troops moved in to attack and savage fighting ensued. The Japanese were heavily defeated and thrown back from their positions. The Allied troops also suffered heavy casualties. This was the last serious effort the Japanese made and the survivors slipped out eastwards. Meiktila was now firmly in Allied hands. The whole area was immediately cleared. The suicidal resistance of the Japanese had cost them nearly all their equipment and a grievous loss in men.

Battle for Mandalay

In the last days of February 1945, when the IV Corps was engaged in stiff fighting around Meiktila, the XXXIII Corps was poised on its bridgeheads to the north and west of Mandalay, ready to advance. It will be remembered that the 19th Indian Division had established bridgeheads across the river at Thabeikkyin and Kyaukmyaung to the east of Shwebo. The Japanese had failed in their incessant attempts to liquidate this bridgehead. By the middle of February, the 19th Indian Division was ready to strike south. The 20th Division had a bridgehead on the southern bank of the river Irrawaddy, 40 miles to the west of Mandalay, and the 2nd Division, which was the last division of the XXXIII Corps across the river Irrawaddy, had established the bridgehead about 25 miles to the west of Mandalay and was now completing its concentration there. The crisis of the great battle was now approaching. It was essential that the Japanese should have all their attention devoted to Mandalay in order that the IV Corps might be established across the river at Pakokku.

The battle for Mandalay commenced on 20 February, when the 64th Indian Infantry Brigade of the 19th Indian Division broke out from Kyaukmyaung bridgehead and moved to the foothills in the east. On the following day the 62nd Indian Infantry Brigade followed up and then the two brigades drove almost due south before which the Japanese were literally swept away. Isolated pockets of Japanese resistance remained behind, but these were cleared up by the 98th Indian Infantry Brigade advancing south from the northern bridgehead at Thabeikkyin. By 3 March, the 19th Division had moved into open country suitable for deployment of armour. The two Japanese divisions, namely the 15th and the 53rd, were quite unable to stop the onrush of the Allied troops. Strong Japanese positions were either carried or bypassed and the advanced troops of the division reached the Chaungmagyi Chaung, 18 miles north of Mandalay. The 98th Indian Infantry Brigade was the first to arrive whilst the 64th Indian Infantry Brigade was still mopping up the pockets of resistance in the areas to the north. The 62nd

Indian Infantry Brigade to the north-east of Mandalay was engaged in rounding off Japanese pockets of resistance in the region of Yentha.

On 5 March, the Chaungmagyi Chaung, the last major obstacle before Mandalay, was crossed. The Japanese had prepared strong positions about Madaya, due north of Mandalay, where the railway line terminated, but these positions were stormed and occupied even as the Japanese were trying to man them. The tempo of the advance now accelerated and it appeared as if nothing could stop the 19th Indian Division. As Mandalay itself was approached, resistance though still unco-ordinated, visibly stiffened. By dawn on 8 March, the 64th Indian Infantry Brigade was fighting about two miles to the east of Mandalay, whilst the 98th Indian Infantry Brigade, the spearhead of the attack, had already reached the northern outskirts of the town.

Early on 9 March, the 98th Indian Infantry Brigade launched the attack on Mandalay hill and captured it after 24 hours of most bitter hand-to-hand fighting. For the next three days the troops of the 19th Indian Division fought their way through the city towards the Fort Street until on 14 March Fort Dufferin was completely invested. A gallant attempt by the 98th Indian Infantry Brigade to storm the fort failed, the attackers being held up by the thick weed in the moat surrounding the fort. Old time methods of siege warfare were then adopted in order to avoid serious casualties which a direct assault on the fort would entail. Guns were brought up to breach the walls, rafts and ladders prepared and storming parties detailed. Attacks made on the north-west and north-east corner of the fort during the night of 16 March were repulsed by the Japanese. Further attempts to cross the moat again failed. It was clear that attempts to breach the wall or scale it would prove costly, and aircraft was now called in to bomb out a portion of the wall. By 19 March, a small breach, some 15 feet wide, was made. Meanwhile attacks continued with unabated fury. The Japanese had enough casualties and on the night of 19/20 March remnants of the garrison attempted to escape. A majority of them were intercepted but a few managed to slip through. On the morning of 20 March, a group of civilians appeared at one of the gates waving white flags to inform the attackers that the Japanese garrison had withdrawn, and Fort Dufferin was occupied the same day.

While these dramatic events were taking place in the Mandalay area the 62nd Brigade of the 19th Indian Division, whose advance had been described up to Madaya, moved south-east towards Maymyo, the summer capital of Burma. Marching for three days along the Smugglers Tracks and across to mountain ranges and a very deep valley, the brigade burst into the quiet of the lovely hill station to the utter surprise of the Japanese garrison, mostly of administrative and base troops who were located there. They fled in all directions but hardly any escaped. The Brigade, after clearing Maymyo and leaving a garrison there, rejoined the division. Since reaching the Irrawaddy, the 19th Indian Division had cleared the area Mandalay—Maymyo of the Japanese in ten weeks of unparalleled hard fighting and rapid movement. Meanwhile, the 20th Indian Division to the west of Mandalay broke out from

its bridgehead and pushed rapidly east and extended its bridgehead towards that of the 2nd British Division. On 2 March, the two divisions linked up but heavy Japanese attacks continued. By 5 March, the two bridgeheads were finally united. Losses suffered by the Japanese in this sector were also very heavy and much of their equipment was either destroyed or captured.

The Japanese command by this time had realised that they had lost the fight for Central Burma. If the battle for India had been decided on the Imphal plain, the Mandalay and Meiktila battles had decided the fate of the Japanese armed forces in Central Burma. It appeared at this time that the Japanese were hopeful of halting further advance on a line running south-west from Kyaukse-Myingyan-Mt. Popa to Chauk, but it was clear that the longer the Japanese stayed in Central Burma the greater would be their losses.

Operations of the 7th Indian Division

The fighting in the region of Myingyan has already been described. As the troops were poised for attack on Myingyan, it became necessary to divert some forces from this front to deal with a strong Japanese force which, coming away from the north, had firmly entrenched itself in the dominating ground north-east and south-east of Taungtha on the main L of C to Meiktila. It was necessary to clear this area of Japanese troops as the administrative headquarters of the 17th Indian Division was about to move from Nyaungu via Taungtha to Meiktila. In addition the headquarters of the IV Corps as well as the 5th Indian Division were about to assemble on the bridgehead area at Nyaungu for moving forward to Meiktila. A plan was, therefore, evolved whereby an armoured column from the 17th Indian Division was to open up the road to Taungtha, whilst Taungtha itself and the area to the north was to be cleared by the 33rd Indian Infantry Brigade.

Postponing for a while the capture of Myingyan itself the troops of the 33rd Indian Infantry Brigade began to move towards Taungtha on 5 March. Taungtha was captured the following day and was held against very light opposition. Two hill features of Taungtha—one to the south-east and another to the north-east of Taungtha—were held by the Japanese and until these positions were captured the L of C was not safe. The southern hill feature was attacked on 7 March but the Japanese were securely dug in at the summit of this hill feature and defied every attempt to oust them. Fighting continued during the succeeding days and on 14 March the hill feature and the area surrounding it was finally cleared of the Japanese. The hill feature of the north-east, however, still defied all attempts at capture. This position changed hands and the Japanese fought stubbornly. Meanwhile, the 161st Indian Infantry Brigade of the 5th Indian Division had moved up to Taungtha and this brigade relieved the troops of the 33rd Indian Infantry Brigade and continued the assault on the feature.

On its relief from the Taungtha area the 33rd Indian Infantry Brigade once again devoted its attention to the capture of Myingyan. The preliminary concentrations completed, the 33rd Indian Infantry

Brigade began the attack against Myingyan on 16 March. The capture of the town was found to be a very difficult task. The Japanese were firmly entrenched in the town and had to be hounded out of their positions one by one, and it was not until 22 March that the town was finally cleared. The fighting was very severe and both sides suffered very heavy casualties. After the capture of Myingyan the 33rd Indian Infantry Brigade sent out strong patrols in all directions and cleared the surrounding villages of all Japanese troops. The capture of Myingyan was a very important gain in Central Burma as this opened the way for using the river Chindwin for transport of supplies and troops. The whole administrative plan was now to move supplies by water from Kalewa to Myingyan and thence by rail to Meiktila. The brigade now turned south once again to relieve the 161st Indian Infantry Brigade of the 5th Indian Division. The road to Meiktila was now open and the 5th Indian Division started moving east on 31 March to Meiktila. The Corps Headquarters as well as the administrative headquarters of the 17th Indian Division also moved into Meiktila.

Reference has been made earlier to the operations of the 89th Indian Infantry Brigade south of Pagan, on the east bank of the river Irrawaddy, to thwart the attempts of the Japanese to liquidate the bridgehead at Nyaungu which was part of the Japanese counter-offensive plan for the recapture of Meiktila. The fighting in this area was very confused, but the Japanese were not given any respite. Initiative always remained in Allied hands. Fighting was extremely heavy and both sides suffered casualties. Many positions changed hands frequently. But the overall gain always remained on the side of the 89th Brigade. After overcoming Japanese resistance in the initial stages the 89th Indian Infantry Brigade commenced to advance south and, by 26 February, had taken Monatkon. The Japanese had suffered considerably in men and material in the early stages and their resistance was greatly weakened. The advance was continued to Singu which was occupied in April.

The main battle of Central Burma was now coming to a close, and it only remained to mop up the various scattered Japanese formations. The success which attended these operations was due in no small measure to the fact that the Japanese were now bereft of their jungle cover and were fighting in a country which allowed the Allied forces to manoeuvre their armour and air force to bring their full weight on the Japanese.

The Situation in Central Burma at the end of March 1945

The capture of Meiktila and Mandalay and the severe reverses suffered by the Japanese in Central Burma gave an entirely new aspect to the war in Burma. The Japanese forces had been gravely weakened. Their formations had been decimated and equipment very nearly destroyed. The Fourteenth Army was now in a position to advance fast meeting with only isolated and unco-ordinated resistance.

After the capture of Meiktila, the IV Corps had secured the area from Irrawaddy to Thazi. The XXXIII Corps was in complete possession of the Mandalay—Maymyo area. Between these two bodies

of well organized forces was a large group of Japanese troops, without supplies or communications or controlled by a single command. The Fourteenth Army, on the other hand, with its vastly greater resources, its superior equipment and stores, its efficient administration and communications, was poised for further advance in full knowledge of the fact that the Japanese had been completely defeated. Morale was overwhelmingly high and the formations were not only eager to drive forward but were competing with each other fiercely to gain the lead.

The ultimate intention was to capture Rangoon before the monsoon which was due in the next five to seven weeks. A quick advance to Rangoon involved many problems, the most serious being the maintenance of the force. The distance from Meiktila to Rangoon was 320 miles and it meant that a ten mile advance against opposition would have to be made daily to reach Rangoon before the monsoon. Of the seven divisions now in the Fourteenth Army, only five could be supplied south of Meiktila and only three if the advance was to be a rapid thrust over long distances. The original intention to advance in strength both by the road-rail and by the river axis had also to be given up due to maintenance difficulties. If the Fourteenth Army failed to take Rangoon before the monsoon and was stranded in Central Burma, the offensive might easily turn into disaster. Speed was the essence of victory, hence it was decided to make the major advance down the road-railway axis which entailed the use of a mechanized force of at least two divisions and a tank brigade. Also by moving south along the easterly axis, the Fourteenth Army could cut off large numbers of Japanese in the Irrawaddy valley forcing them to cross the mountain ranges and then to run the gauntlet across the Meiktila-Rangoon road if they were to escape into Siam.

Originally the XXXIII Corps had been chosen for the advance down the railway from Mandalay to Rangoon, but the 5th and 17th Divisions of the IV Corps were already in Meiktila, 50 miles further south. In addition, the IV Corps had been reorganized on a mechanized and airborne basis. This resulted in the IV Corps being selected for the main thrust to Rangoon along the road-rail axis. The XXXIII Corps was to move south-west and advance along the river axis. For maintenance, all troops on the road-railway line south of Toungoo were to be supplied by air and those to the north of it were to be supplied by road, and, when possible by rail. In the Irrawaddy valley, the XXXIII Corps was to depend on road and inland water transport for supplies; except when necessary, supplies for one division could be dropped by air. The method of advance down the railway line was through leapfrogging. This was to consist of a series of rapid bounds, in each case to seize an airfield or a site for an airfield. After the airfield was secured, an airborne brigade was to be flown; whilst this brigade held the air base, the division was again to bound forward. The division was to continue until it reached its objective when the following division would pass through and continue the advance. Since no time could be spent for completely eliminating Japanese resistance, the advance entailed no waiting to deal with Japanese positions until Rangoon was reached. This, in essence, meant the bypassing of many Japanese positions and leaving them on the L of C. When Rangoon had been reached the troops were

to be turned on their tracks and begin the elimination of all pockets of Japanese resistance left behind *en route*. On 18 March, instructions were issued dividing the operation into three phases. The Fourteenth Army was instructed, after completing the task of overcoming all Japanese resistance in Central Burma to capture Rangoon, at all costs and as soon as possible before the monsoon, besides Yenangyaung, Magwe and Prome. It was also to secure the area Myingyan-Mandalay-Maymyo-Chauk and the road-railway line from Meiktila to Rangoon.

The 2nd British Division had broken out from its bridgehead at the beginning of March and was busy in mopping up operations to the south of Mandalay. On 26 March, it commenced moving westwards towards Myingyan, preparatory to crossing over in accordance with the Fourteenth Army plans. The division was concentrated south of Myingyan by 28 March, and the second brigade of the division moved south to Welaung. At the end of the month, prior to advancing south-west towards Kyaukpadaung, the 268th Indian Infantry Brigade, which was last described as conducting operations in the bed of the river Irrawaddy in the Sagaing area, joined the 2nd British Division. The advance commenced on 2 April and the leading elements of the 2nd British division reached Lagyi to the north of Mt. Popa, the same day. The Japanese put up stiff resistance there, and it was not until 9 April that the locality was taken. Meanwhile, the 268th Indian Infantry Brigade, moving from Ngathayauk on 10 April, had reached the line of the road north-east of Kyaukpadaung by 12 April. It was then placed under command of the 2nd British Division for operations against Mt. Popa, which was captured, in spite of strong resistance, on 20 April. The advance then continued and contact was made the same day with the 268th Indian Infantry Brigade. The next few days were spent in mopping up stragglers and stray parties of the Japanese trying to escape to the south.

The 7th Indian Division

The tasks allotted to the 7th Indian Division during this phase of operations were:—

- (1) To capture the oilfields area at Yenangyaung;
- (2) To clear the west bank of the Irrawaddy southwards, and at the same time to cut off the Japanese troops withdrawing towards Arakan;
- (3) To capture Kyaukpadaung and Gwegyo as a preliminary to the accomplishment of the above. The former was a strategically important place almost in the centre of the valley, connected by road with other places, like Meiktila in the east, Chauk and Singu in the west and Nyaungu in the north-west and Yenangyaung and Magwe in the south-west.

The divisional plans for the capture of these objectives were as follows:—

The 33rd Brigade was to capture Kyaukpadaung and turn west from there to capture Gwegyo and enter Chauk from the south-east. The 89th Indian Infantry Brigade was to attack the northern part of Chauk in conjunction with an assault from the south-east by the 33rd Indian Infantry Brigade.

By 11 April, the 33rd Indian Infantry Brigade reached the Pinyin Chaung, some 8 miles north-west of Kyaukpadaung, without any opposition. On the night of 11/12 April, troops from the brigade made an outflanking move west of Kyaukpadaung and an isolated feature to the south of the town, from which an excellent view of the area was available, was captured. On the morning of 12 April the outskirts of the town were cleared. Heavy fighting continued throughout the whole day; the Japanese in spite of the surprise fought fiercely. On the following day the town was completely cleared of the Japanese. The next objective of the 33rd Indian Infantry Brigade was the village of Gwegyo—a small village on the road connecting Yenangyaung with Chauk. It was anticipated that stiff resistance would be met at Gwegyo in an attempt to hold the road to allow the Japanese to withdraw to Yenangyaung. But the speed of the advance was not slowed down and by first light on 14 April, the troops of the 33rd Indian Infantry Brigade had established a roadblock about one and a half miles from Gwegyo on the Kyaukpadaung-Chauk road. After a sharp, short fight the village was captured and almost the entire garrison was annihilated. With the capture of Gwegyo and Kyaukpadaung, the project of a two brigade attack on Chauk could be launched. On 17 April, instructions were received for the capture of Chauk, Singu and Seikpyu. The 89th Indian Infantry Brigade moved to capture the northern part of Singu and then secure the south end of the Chauk ridge. The oil-fields here were situated amongst a spine of hills running north-south with the rib stretching towards Irrawaddy and ending in low cliffs. At the south-east corner of the oilfields lay a hill feature which dominated the area of Chauk and also the main road from Gwegyo. After encountering Japanese resistance in Singu, the 89th Brigade pushed patrols forward to the north end of Chauk on 13 April. Here they were held up for two days and suffered very heavy casualties. The 33rd Brigade, coming up from the south-east, moved to the hill feature mentioned above and secured it on 16 April. At dawn on 18 April, the troops of the 33rd Indian Infantry Brigade moved forward towards the town of Chauk itself. It was found that the Japanese had evacuated the position during the previous night by escaping across the river to Seikpyu towards Yenangyaung. Contact was established between the two brigades operating in this area on 18 April. Meanwhile, the 114th Infantry Brigade, advancing along the west bank of the river Irrawaddy, had occupied Seikpyu without any opposition on 20 April.

The 33rd Indian Infantry Brigade now started to regroup for further operations. Speed was essential as the Japanese had been naturally thrown off their guard by the advance of the two brigades. The oil-fields at Yenangyaung lay within an area, about 6 miles long and 4 miles wide, surrounded by bare hills rising to an average height of 600 feet. Within this circumference of hills lay a conglomeration of deep nullahs and precipices which separated their main spurs running across the area from east to west. A network of excellent roads covered the whole area. It was essentially a paradise for defence. In view of the potential strength of the defence covering the oil-fields area, the plan of attack was for the 33rd Indian Infantry Brigade to penetrate the

hills surrounding the oil-fields whilst the 89th Indian Infantry Brigade was to make a wide outflanking movement and cut the main road short of Yenangyaung, and then simultaneously with the 33rd Indian Infantry Brigade to attack the oil-fields. In accordance with this plan the attack commenced on the morning of 19 April, but very little resistance was met. Sporadic fighting occurred and by 1700 hours on 21 April, the troops of the 33rd Indian Infantry Brigade had completely surrounded the oil-fields area except where it skirted the river Irrawaddy. The Japanese promptly evacuated the position, and the capture of the oil-fields had been completed.

Again the speed of the 7th Indian Division's advance had completely baffled the Japanese and plans were now quickly made to exploit these successes. The 89th Indian Infantry Brigade was asked to cross the river Irrawaddy to the west of Kyaukse and advance on Sagaing from the south. The 114th Indian Infantry Brigade was to advance as rapidly as possible on Sagaing from the north along the west bank of the river Irrawaddy. The 33rd Brigade was ordered to consolidate Yenangyaung and send strong fighting patrols with tanks towards Magwe. Before these operations are taken up, it would be necessary to revert once again to the operations of the 20th Indian Division to which fell the main task of clearing the Japanese positions between Meiktila and Mandalay.

Early in March, the 20th Indian Division moved to Kyaukse, about 30 miles south of Mandalay, on a two brigade front. The third brigade, namely, the 100th Indian Infantry Brigade moved due south to Myotha, south of Ngazun, which was captured easily on 13 March. The Brigade thereafter concentrated at Chaunggwa by 18 March. It was then ordered to move south to Wundwin area with the object of relieving pressure on the Allied forces at Meiktila where a battle was then raging. The brigade advanced through Pyinzi and Pindale for a distance of 31 miles in three days and reached Wundwin on 21 March, which was easily occupied. By this time the Japanese counter-attack on Meiktila showed signs of fizzling out, and the brigade was, therefore, ordered to move north to Kyaukse. By 27 April, all the three brigades of the 20th Indian Division were operating against Kyaukse and its outposts. The 32nd and the 80th Indian Infantry Brigades were already in the area engaged in a bitter struggle with the Japanese and had inflicted severe casualties on them. But Kyaukse itself had held out. With the arrival of the 100th Indian Infantry Brigade, efforts were redoubled to recapture the town. The Japanese had also had by this time enough of fighting in this area and had begun to thin out, but it was only on 30 March that Kyaukse was finally occupied. With the capture of Kyaukse the Japanese had lost the last route by which they could withdraw their troops from the north and reinforce their armies to check the advance on Rangoon.

The 20th Indian Division now turned to the west to cut the Japanese communications to the oil-fields and to link up with the 7th Indian Division to complete the switch-over from the north-east to the south-west, in accordance with the intentions of the Fourteenth Army. The

plan was to advance as fast as possible down the axis of the road westwards from Meiktila to Zayatkon and thence south to Magwe and Allanmayo. Two brigades of the 20th Indian Division were organised to a full motor transport basis. This reorganization was made possible by the fly-out of the 2nd British Division whose transport was made available to the 20th Indian Division. The Japanese forces entrusted with the defence of the Irrawaddy valley were facing north and east. The main communications of this force were by road and river which ran south, but their link with the Japanese force on the rail-road axis was along a road that bent east at Magwe and ran through Taungdwingyi in the waterless desert between the two axes. The Japanese had previously taken it for granted that no force could make a sudden dash for Taungdwingyi. Again they had miscalculated. The 32nd Indian Infantry Brigade reached Zayatkon on 11 April, and commenced advance to Taungdwingyi. On the following day it had reached Natmauk and the next day Kyaunggon was reached. During all this period no contact was established with the Japanese forces. Without any pause the brigade pushed forward and occupied Taungdwingyi on 14 April. The Japanese were totally surprised at the appearance of the Indian troops. They made some half-hearted attempts to recapture Taungdwingyi, but they were totally unsuccessful. Having completed the capture of Taungdwingyi the 32nd Indian Infantry Brigade advanced south and reached Sathwa on 17 April. The town was found to be unoccupied and so the brigade bypassed the town and continued its advance.

Meanwhile, other troops moving along the road leading west of Zayatkon established a roadblock to prevent the Japanese from escaping southwards from Mt. Popa area where fighting was still in progress. From its base at Taungdwingyi, the 32nd Indian Infantry Brigade sent columns to the west to secure the Japanese retreat routes from Magwe. Columns were organized which struck due west from Taungdwingyi and reached Myingyan on the east bank of the Irrawaddy without opposition. The 80th Indian Infantry Brigade during this period had moved forward from Kyaukse through Meiktila to the Natmauk area from where it advanced down the road to Magwe on 17 April. The main aim of this advance was to recapture the oil-fields east of Magwe and to block the road Magwe-Yenangyaung prior to the occupation of Magwe itself. The advanced troops of the brigade reached the outskirts of Magwe on 19 April, and swept into the town itself the same day.

The 20th Indian Division and the 7th Indian Division by this time had cleared the oil-fields area. Large numbers of Japanese troop were forced on to the west bank of the river, whilst those on the east bank split up into small groups trying to escape. On 21 April the XXXIII Corps issued instructions which laid down that the 20th Indian Division would capture Prome with maximum speed. The task was assigned to the 100th Brigade which took over from the 32nd Indian Infantry Brigade for the purpose of advancing to Prome rapidly. The 100th Brigade commenced the first stage of its advance to Allanmayo on 24 April from Sathwa. For this operation the brigade was split into two groups: one, the smaller group, consisted of one battalion with

supporting arms including armour, and the second group consisted of the remainder of the brigade less one battalion which was left at Saththwa. Against desultory Japanese opposition the advance continued and the first group reached the outskirts of Allanmayo on 27 April and entered the town on the following day and eventually cleared the town against strong opposition. The next day the advance was continued with the 32nd Brigade closely following up. Resistance from the Japanese was again met at Bwetgwi, about 12 miles south of Allanmayo. But this was broken and severe losses were inflicted on the Japanese. The advance to Prome was resumed and in spite of demolished roads and destroyed bridges on the way, the advanced elements were within 15 miles of Prome on 1 May. During the last lap of the advance next day to Prome no opposition was met and the town itself was found clear of the Japanese, except for some isolated stragglers. By 3 May the spearhead of the advance had reached Shwedaung, ten miles south of Prome, without meeting any opposition. Behind this rapid advance the 20th Indian Division was concentrating in Allanmayo. The situation of the XXXIII Corps by 2 May may be summarised as follows:—

The 20th Indian Division was concentrating in Allanmayo and had already captured Prome.

The 268th Indian Infantry Brigade was concentrated in Allanmayo preparing for operations west of the Irrawaddy.

The 7th Indian Division, less two brigades, was established at Magwe. Corps Headquarters had opened at Magwe.

The 32nd Indian Infantry Brigade was preparing to take over from the 100th Indian Infantry Brigade to lead the advance along the Prome-Rangoon road.

Medical Cover 17th Indian Division

It has been mentioned earlier that the 48th Indian Infantry Brigade and the divisional headquarters had moved within eight miles of Meiktila on 27 February and deployment for the operations against Meiktila commenced on the following day. The 63rd Indian Infantry Brigade made a wide outflanking movement to the south; and 23 Indian Field Ambulance followed the advance of this brigade and on 29 February it reached Antu and established an ADS there. A light ADS was also sent forward to afford medical cover to the troops who were detailed to establish a road block on the Meiktila-Kyaukpadaung road. On 1 March, the 63rd Indian Infantry Brigade moved to Meiktila west and a MDS was established for this brigade at Kanna, on the same day. The casualties were moved to a car post at Antu, from where they were sent to the rear air-strip for evacuation to the Corps Medical Centre. On the following day a Japanese hospital in Meiktila was captured which contained fourteen patients which had been left behind by the retreating Japanese troops. They were in a very pitiable condition suffering from nutritional deficiencies with oedema and anaemia and a few with old wounds which had not been treated for days. The Japanese hospital showed signs of a very hasty retreat. Casualties had been left behind and equipment was found burnt and scattered.

Troops had started clearing up Meiktila west and met with heavy opposition. There was a considerable number of casualties, on 2 March itself a total of 75 cases was received by 23 Indian Field Ambulance. Meanwhile, the 99th Indian Infantry Brigade, operating in the airfield sector, was covered by MDS 50 Indian Field Ambulance located near the airfield. The casualties received by the ADS of 23 Indian Field Ambulance were evacuated to the MDS 50 Indian Field Ambulance from where they were flown out by medium aircraft. The MDS of 23 Indian Field Ambulance itself had remained closed during this period and the ADS continued to function at Kanna. Owing to the heavy nature of the work the ADS had to be reinforced by personnel from the headquarters of the field ambulance.

During the subsequent operations of the 63rd Indian Infantry Brigade one company of the 23 Indian Field Ambulance was brigaded for opening ADSs whenever necessary, while HQ 23 Indian Field Ambulance opened a MDS near the air-strip area in west Meiktila. Casualties still continued to be evacuated through the MDS 50 Indian Field Ambulance which had 8 Mobile Surgical Unit attached to it as surgical reinforcement. These arrangements continued during the rest of the battle of Meiktila.

Medical cover in Meiktila

During the month of March, the 17th Indian Division was virtually encircled in Meiktila. Only two field ambulances were mainly functioning during this period in Meiktila, namely, the 23 and 50 Indian Field Ambulances. Earlier a field ambulance was flown in along with the 99th Indian Infantry Brigade which joined the division towards the end of February 1945. The fighting in Meiktila resolved itself into numerous expeditions to deal with innumerable Japanese attacks from all directions. The main MDS for the operations was the MDS 50 Indian Field Ambulance. Medical detachments were sent with the columns moving in all directions to fight the Japanese parties and casualties were evacuated by stretcher bearers and ambulance cars to the MDS 50 Indian Field Ambulance. The airfield was suitable for medium aircraft and Dakotas evacuated the casualties from this airfield to the Corps Medical Centre. Towards the middle of March the airfield came under heavy artillery and mortar firing from the Japanese who had managed to infiltrate to the environs of the airfield. Consequently air communication had to be discontinued. Casualties were then evacuated to MDS 23 Indian Field Ambulance which had a MDS in Meiktila West near a light plane air-strip. Fighting was very heavy and it was difficult to get casualties across to MDS 23 Indian Field Ambulance. Some 300 patients had accumulated in MDS 50 Indian Field Ambulance but the work by the light aircraft was so excellent that no less than 637 patients were evacuated by them in a period of five days. During the whole month 2,033 patients were evacuated by air from the besieged garrison. In view of the fact that no casualties were being evacuated from ADS 50 Indian Field Ambulance, 8 Mobile Surgical Unit was moved to the MDS 23 Indian Field Ambulance.

MDS 23 Indian Field Ambulance began to receive a large number

of casualties after 25 March, when the MDS 50 Indian Field Ambulance closed down. To meet this increased work two surgeons were flown in as reinforcements and thereafter the three surgical teams (including 8 Mobile Surgical Unit) worked in eight-hour shifts. Similar medical cover was afforded for the other two brigades of the division, namely, the 48th and 99th Indian Infantry Brigades. It is not possible to give the medical cover in a chronological way, as the fighting was distributed over a wide area and confused to the extreme. Two MDSs were functioning, one near the light air-strip and another near the airfield receiving medium aircraft. Evacuation in most instances was hazardous and all the personnel showed great devotion to duty in getting the casualties to the ADS and thence to the MDS.

Medical Cover for the 19th Indian Division

It may be recalled that early in February, the 19th Indian Division had established two bridgeheads across the river Irrawaddy at Thabeikkyin and Kyaukmyaung and bitter fighting developed in which the Japanese tried to eliminate these bridgeheads. 53 Indian Field Ambulance was the first to cross the river on 12 February and established a MDS at Singu, due east of Shwebo, on the east bank of the river Irrawaddy. On 18 February, the 52 Indian Field Ambulance also crossed over and arrived at Singu. MDSs of both these ambulances functioned at this place and evacuated casualties to the west bank of the river initially. After these two field ambulances had crossed the river, 51 Indian Field Ambulance alone was left on the west bank of the river at Kyaukmyaung and was responsible for receiving all casualties and evacuating them to the rear to the medical centre at Shwebo. Casualties from Thabeikkyin were also evacuated by light aircraft to Shwebo centre from the ADS in that area. MDS at Kyaukmyaung was receiving on an average hundred patients daily. On 21 February, MDS 51 Indian Field Ambulance moved from Kyaukmyaung to Shwedaik to the south and opened there to hold the light sick cases. All battle casualties were now evacuated directly to the Shwebo centre from the bridgehead. There was a slight increase in the incidence of sickness and MDS was kept fairly busy. On 27 February, the MDS 51 Indian Field Ambulance closed at Shwedaik and handed over the remaining patients to 67 Indian Staging Section and crossed the river on the following day arriving at Singu where it remained closed.

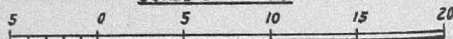
Thus by 1 March, all the three ambulances were at Singu across the river Irrawaddy. The advance to Mandalay had commenced and 53 Indian Field Ambulance was the first to move forward and this unit opened a MDS at Taung-Betywa. Casualties received from the forward areas were evacuated through the MDS 52 Indian Field Ambulance which was still functioning at Singu. One mobile surgical unit joined the MDS to form a forward operating centre.

Casualties were few at this time and on 10 March, MDS 53 Indian Field Ambulance moved to Madaya. MDS 52 Indian Field Ambulance which was functioning at Singu was overloaded with casualties. This was a route of evacuation for all battle and sick casualties to the west.

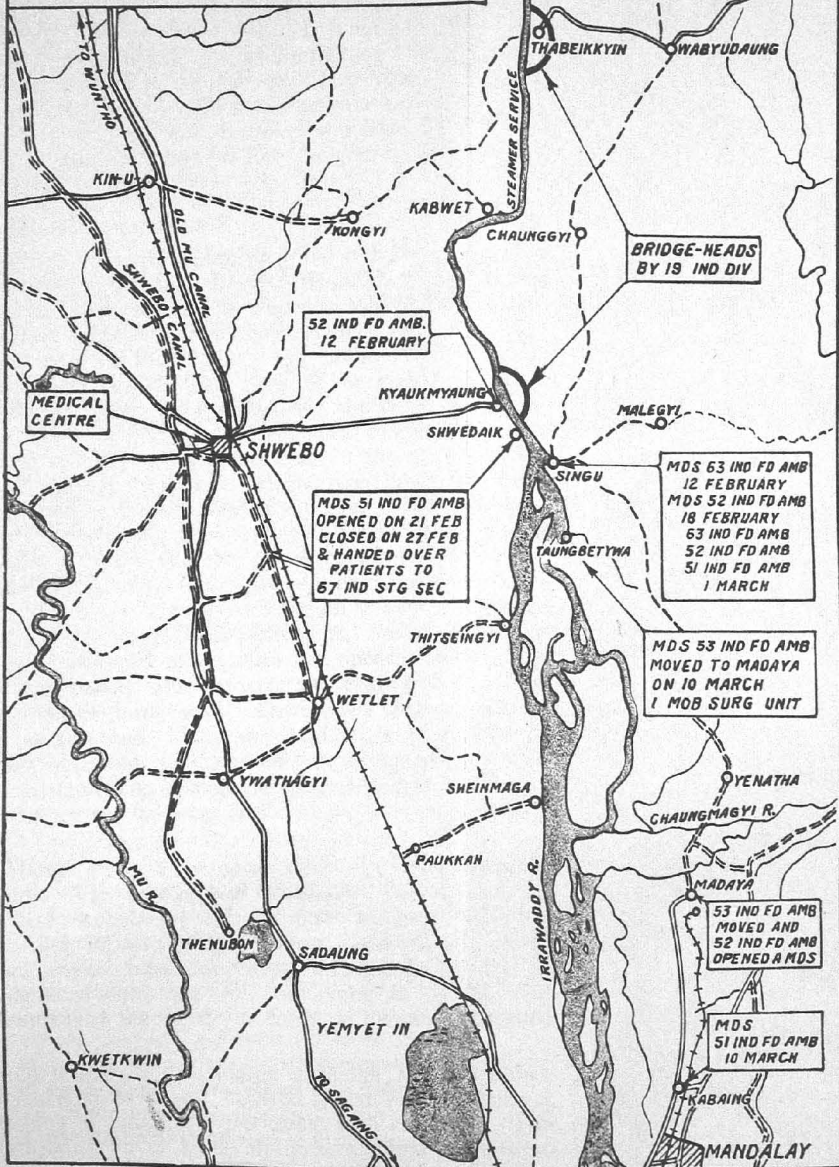
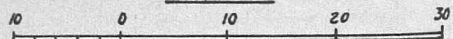
MEDICAL COVER FOR 19 IND DIV

12 FEB - 25 MAR 1945

SCALE OF MILES



KILOMETRES



By this time the air-strip at Singu was opened for light aircraft and the cases from 52 Indian Field Ambulance were evacuated to the rear. 53 Indian Field Ambulance moved forward from Madaya and 52 Indian Field Ambulance opened a MDS in the same place. 4 Mobile Surgical Unit which had been attached to the 53 Indian Field Ambulance was instructed to work with MDS 52 Indian Field Ambulance. There were many buildings in this area and all the patients were provided good accommodation. Meanwhile, the 51 Indian Field Ambulance also moved forward leaving two medical detachments at the air-strip at Singu. Headquarters of this field ambulance provided medical cover for the crossing of the Chaungmagyí river. This unit reached Madaya by 6 March. The two companies of 51 Indian Field Ambulance were moving with the 98th Indian Infantry Brigade and had reached the northern outskirts of Mandalay by 8 March. The next main centre to which the headquarter of the field ambulances moved was Kabaing. 51 Indian Field Ambulance established an MDS at Kabaing on 10 March and evacuated casualties to the MDS 52 Indian Field Ambulance which was functioning at that time in Madaya. An air-strip was constructed at Kabaing wherefrom casualties were evacuated to the Corps Medical Centre at Sadaung. 52 Indian Field Ambulance arrived in the area on 15 March but owing to the fact that the MDS of 51 Indian Field Ambulance was functioning in the same area, this unit established a light MDS to cater for sick casualties. The MDS also received a considerable number of civilian casualties who were being evacuated from Mandalay. 53 Indian Field Ambulance which was functioning under the command of the 98th Indian Infantry Brigade evacuated casualties from this brigade to Sadaung. These arrangements were maintained until the fall of Mandalay. Subsequently, the MDS functioned as a clearing centre and by 25 March casualties had ceased to arrive.

Medical cover for the 20th Indian Division

After the conclusion of the battle for Meiktila, the 20th Indian Division moved to Alethaung. MDS 59 Indian Field Ambulance at Lingadippa received only minor medical cases from all the three brigades of the division. Surgical cases and battle casualties were evacuated to ADS and thence to MDS of 42 Indian Field Ambulance at Allagappa. On 8 March, MDS 59 Indian Field Ambulance moved to Ywabo and opened up to receive casualties. 55 Indian Field Ambulance followed up and moved through Lingadippa to Gyo which was reached on 12 March, where a MDS was established. 10 Mobile Surgical Unit also joined this MDS to provide surgical cover for the operations then in progress. By 10 March, the divisional headquarters had also moved to Ywabo and three days later, it again moved to Gyo. From Ywabo casualties were evacuated by light planes. The MDS 59 Indian Field Ambulance which was functioning in the area had two operation theatres to cope up with the heavy rush of battle casualties. On 14 March, MDS 42 Indian Field Ambulance was closed at Allagappa and all serious medical cases were evacuated to Monywa and all the surgical cases to the Corps Medical Centre at Sadaung. This field ambulance thereafter crossed the river Irrawaddy and moved to Chaunggywa and opened a

MDS with No 10 Mobile Surgical Unit. On 20 March, 55 Indian Field Ambulance was closed at Gyo and moved to Ngazun and established a MDS in this area. The 10 Mobile Surgical Unit also joined this MDS; in addition a dental unit, a transfusion unit and an additional surgical team from the 8 Indian CCS joined the MDS. There was a heavy influx of casualties and with the additional surgical complement, the MDS dealt with all this expeditiously. Four nursing sisters also arrived at this MDS to look after serious post-operative cases. Earlier, the 59 Indian Field Ambulance moved from Ywabo to Chaunggwa on 17 March and opened a MDS here to receive all military and civilian cases. On 22 March, 42 Indian Field Ambulance which was also functioning at this place handed over its patients to 59 Indian Field Ambulance and moved to Dowhela. A detachment from the headquarters of this field ambulance moved to Wundwin. This light MDS joined the ADS of 42 Indian Field Ambulance to provide medical cover for fighting in this sector. On 30 March, an ADS and a light MDS moved to Kume and established a medical station. 59 Indian Field Ambulance also moved to Ngazun on 24 March. It will be remembered that the MDS 55 Indian Field Ambulance was also functioning in the area. Owing to the pressure of work in the MDS 55 Indian Field Ambulance, 59 Indian Field Ambulance, which had remained closed, loaned its personnel to the former unit. The change of the axes of the division was now being undertaken and on 4 April, 59 Indian Field Ambulance moved to Zale and established a MDS for the reception of casualties. All serious cases were evacuated from this MDS by air to Meiktila, whereas all sick cases were moved to 8 Indian CCS at Tada-U. 55 Indian Field Ambulance which was still at Ngazun moved to Zale on 6 April and remained closed. In the phase that followed all units and formations of the division were being withdrawn to Meiktila area. On 9 April, 55 Indian Field Ambulance with 10 Mobile Surgical Unit and other ancillary units moved to Meiktila where an MDS was opened on the following day. Casualties were evacuated to the CCS at Meiktila. The same day 59 Indian Field Ambulance also arrived at Meiktila. The 20th Indian Division had now been relieved by the 36th British Division. All the medical units were being relieved by the latter division.

By the second week of April, all the units had been withdrawn to Meiktila. On 14 April, 59 Indian Field Ambulance and the advanced divisional headquarters moved to Natmawk to provide medical cover for the advance of the 32nd Indian Infantry Brigade. An MDS was established very close to Natmawk. A building which was suitable for the purpose of setting up of operation theatre was taken over. Casualties were now evacuated by light aircraft to Corps Medical Centre at Myitche which had been taken over by the XXXIII Indian Corps. When the 32nd Indian Infantry Brigade moved forward, 55 Indian Field Ambulance moved to Matauk to provide medical cover for the operations of the 80th Indian Infantry Brigade. The advance was very swift now with the 32nd Indian Infantry Brigade in the lead. By 21 April, 59 Indian Field Ambulance had reached Taungdwingyi. By this time, the 42 Indian Field Ambulance which had remained so far at Meiktila moved to Taungdwingyi which was reached on 22 April. On 26 April, 55

Indian Field Ambulance also moved to Taungdwingyi. The medical units had again come together. One company from 59 Indian Field Ambulance was all this time with the 32nd Indian Infantry Brigade, which was now fighting for the capture of Allanmayo. On 29 April, 42 Indian Field Ambulance moved into Allanmayo. After the capture of the town, a MDS was opened to receive casualties in that area. Since no air-strips were available for operating light aircraft, all casualties in the first instance were evacuated to Taungdwingyi by road. On 30 April, 55 Indian Field Ambulance also moved to Allanmayo, where it remained closed. Both 42 and 55 Indian Field Ambulances were working MDSs at this time and received a large number of casualties amongst whom a considerable number were civilians. On 4 May, 55 Indian Field Ambulance also moved from Allanmayo to Prome. Here this unit was reinforced by a surgical team from 8 CCS. 59 Indian Field Ambulance moved to Allanmayo, from where it moved again on 6 May and reached Shwedaung, 16 miles south of Prome. In this area the field ambulance opened a MDS in a weather-proof building at Gyobingauk. The CCS had now come as far forward as Allanmayo and evacuation became easy. On 30 May, 59 Indian Field Ambulance moved to Tharawaddy and opened a MDS there. 42 Indian Field Ambulance which had moved to Shwedaung on 21 May worked the MDS there for over a week. From here it moved to Gyobingauk on 27 May and relieved 59 Indian Field Ambulance which moved to Tharawaddy. But fighting was now virtually over and the cases were evacuated by road down to medical units in Rangoon. By 1 June, 59 Indian Field Ambulance opened a medical centre at Tharawaddy with a capacity of 150 patients—maximum retention period being one month. At this centre, education and training was arranged for the personnel of the unit and other amenities, such as games, cinema shows and ENSA shows were provided. The division now occupied the monsoon quarters. The medical units remained almost without work and engaged themselves in training.

Medical Cover—XXXIII Corps

It will be remembered that during the approach to the river Irrawaddy, XXXIII Corps Medical Centre had been established at Shwebo and subsequently when the advance progressed another subsidiary centre was opened at Sadaung. The primary object of establishing the latter centre was to support the 2nd British Division while leaving the 19th and 20th Indian Divisions dependent on Shwebo. However, later the Medical Centre at Sadaung was reinforced as by this time the main airfield at Sadaung was receiving all supply aircraft. An air-strip for light aircraft was also available near the main airfield. This was used to receive casualties from the sector of the 2nd British Division which had forward air-strips at Ondaw and Kyniwa. As reinforcements became available, these were instructed to join the medical centre at Sadaung. And the centre eventually comprised of one CCS, one IMFTU, one MDS, one field laboratory, a field transfusion unit and ophthalmic unit, a VD unit and a dental centre. The site at Sadaung was really not suitable for such a build up and facilities were by no

means as good as were available in Shwebo. These difficulties became more marked when it was decided to shift the supply centre from Sadaung to Ondaw. This involved a back-load to Sadaung of all medical stores. Provision had to be made for special landing of some reinforcements and some supply planes at the Sadaung airfield for evacuation purposes. As might be anticipated this was not an arrangement which always worked.

With the advance of the 19th Indian Division the range of light aircraft from the front to the Corps Medical Centre at Shwebo was lengthening almost daily and the medical centre at Sadaung was subsequently becoming the more accessible medical concentration. It will be remembered that the 20th Indian Division had been covered by a medical centre established from the divisional resources at Allagappa. This centre was in fact a very much enlarged MDS organisation with two surgical teams and did commendable work during the operations connected with the crossing of the river Irrawaddy. They were, however, lucky in having the services of the Consultant Surgeon of the Fourteenth Army who remained in the centre for a greater part of the time. The centre was receiving serious casualties, which during the height of the bridgehead battle amounted to over nine hundred in a fortnight. A certain amount of casualty evacuation direct to the advance hospital areas was also possible from Allagappa as there was an airfield in this area which served medium aircraft flying in supplies. Light aircraft also evacuated casualties from Allagappa in fairly large numbers to the Corps Medical Centre at Shwebo. Even with all these arrangements the Sadaung centre was in a continuous state of being flooded with casualties. And it was necessary from time to time to organise mass evacuation either by road or by air to Shwebo, which continued to be an invaluable stand-by. After the crossing of the river Irrawaddy, by the 2nd British Division which luckily produced only a few casualties, it was possible to close the 8 Indian CCS at Shwebo and bring it forward preparatory to the next build-up south of the river Irrawaddy, after the capture of Mandalay.

TABLE

Average weekly strength of Corps	Total admission all cases (evacuated beyond RAP)	Average daily rate per thousand	
76,813	14,652	1.95	
Average weekly strength of Corps	Diseases	Admissions	Average daily rate per thousand
76,813	Malaria and NYD Fever	3,175	0.42
	Dysentery and Diarrhoea	1,048	0.14
	Typhus ..	154	0.02
	Battle Casualties ..	4,556	0.60

BREAKDOWN OF SORTIES FLOWN BY 164 LIAISON SQUADRON USAAF
20 FEBRUARY — 31 MARCH 1945

Type of A/C	Trips	Hours	Casualties	Cargo lbs.	Miscellaneous (including passen- gers, Recce, PsOW etc.)	
(a)	(b)	(c)	(d)	(e)	(f)	
L-5	..	13,954	5711.30	5,053	294,165	3,427
C-64	..	824	438.50	1,114	125,405	864
Total	..	14,778	6149.80	6,167	419,570	4,291

Note: The 5,053 L-5 trips were flown from ADS/MDS to CCS.
A proportion of C-64 trips were from Sadaung to Shwebo.
Cargo consisted of mainly medical and ordnance stores.

Medical cover in the IV Corps area

The establishment of a Medical Corps Centre at Sinthe, about 40 miles north-west of Myitche, has already been described. As the advance moved forward it was hoped that a Medical Centre would be established at Meiktila, but the severe fighting that developed in Meiktila precluded this possibility. The Japanese had reacted strongly to the thrust of the 17th Indian Division and had not only effectively closed the road behind them but also counter-attacked Meiktila fiercely. The whole area was blanketed with shell and mortar firing and the hopes of establishing a medical centre with at least a CCS in Meiktila had to be given up. On 1 March, Headquarters IV Corps moved to Myitche on the bank of the river Irrawaddy opposite Pagan.

The Corps Medical Centre was at Sinthe, 40 miles to the north-west, while the 17th Indian Division, cut off by land, was in Meiktila, 80 miles to the east. This division in Meiktila had no larger medical formation than field ambulances and a mobile surgical unit and was fighting one of the bitterest battles of the campaign. In addition, it was in action from Taungtha in the north to just north of Chauk in the south and was meeting considerable opposition. The 28th East African Brigade was being heavily counter-attacked at its 'box' at Letse. The 5th Indian Division was also coming under the command of the IV Corps and one brigade was to be flown in. Thus, the Corps extended over a long line from Letse to Meiktila, while the Medical Centre was situated at one corner and contained the 19 CCS and 9 IMFTU, augmented with one improvised surgical team. Evacuation from Meiktila was by medium aircraft, while the 7th Indian Division and 23rd East African Brigade were covered by the light planes squadron. It was necessary for the Medical Centre to be moved forward and provision made for additional air cover. Myitche, where the headquarters of the Corps was situated, had both heavy and light air-strips and was also very suitable for a medical centre. The medical centre at Kani now closed and was instructed to be moved forward to Myitche. Fly-in began on 14

March and was completed in one week. 14 CCS which was the first to arrive began admitting patients on 16 March. As far as possible all casualties were diverted to Myitche to allow the Sinthe Centre which was uncomfortably close to the Japanese operations at this period to close down. Battle casualties in Meiktila were comparatively heavy and in view of the difficulties of the evacuation an improvised surgical team from 19 CCS with its equipment was flown to Meiktila on 19 March. One mobile surgical unit which was functioning with the 17th Indian Division was withdrawn to Myitche to provide additional surgical cover. By 20 March, the Japanese had closed in on the airfield and on 23 March they were actually firing down the airfield. A medium aircraft loaded with casualties about to take off was shot at and disabled, fortunately without loss of life. Thereafter, transport and reinforcement aircraft no longer landed in the airfield at Meiktila and the whole heavy strain of casualty evacuation from Meiktila devolved on light aircraft.

One and a half squadron of light aircraft were available. Sinthe was out of range and the aircraft had to be based on Myitche. All emphasis was now on Myitche and 19 CCS after evacuating as many patients as possible transferred the remainder to 9 IMFTU and moved to Myitche. On 25 March, this CCS opened up rapidly beside the 14 CCS. Due to the fact that only light aircraft were evacuating casualties their numbers piled up at Meiktila. It is gratifying to note that the light aircraft squadron rose to the occasion and redoubled its efforts; and on 26 March, 226 casualties were brought in by light aircraft. Two more mobile surgical units now arrived near Myitche. One was attached to the 19 CCS and the other was flown to Meiktila to reinforce the hard-pressed surgical staff there. Ultimately there were two theatres and three surgical teams in Myitche. During the last week of March, the light aircraft squadron worked to the full capacity or even more. By this time there was considerable relaxation in the Japanese operations and the 5th Indian Division had managed to open the road to Meiktila. The Japanese were being steadily pushed back from the airfield itself and on March 30, the airfield was again available for use and the call on light aircraft was relaxed. Evacuation by medium aircraft commenced the same day.

CHAPTER XXVI

Operations of the IV Corps

While the XXXIII Corps was conducting its operations along the river Irrawaddy, the IV Corps was advancing rapidly down the main road-rail axis from Meiktila to Rangoon. The divisions concerned chiefly were the 5th and the 17th Indian Divisions under command of the IV Corps. The 19th Indian Division after the capture of Meiktila, was to move forward and occupy the Mandalay-Meiktila area and was later to come under the command of the IV Corps itself. The first stage of the advance was with the object of securing Toungoo with all possible speed as a preliminary to operations southwards.

The 17th Indian Division commenced the advance to Pyawbwe, about 24 miles south-east of Meiktila, on 30 March. This place had good natural defensive positions and the Japanese had decided to defend it. The plan of advance was to move down on Pyawbwe from three directions:—

- (1) The 99th Indian Infantry Brigade Group was to move east from Meiktila and attack Thazi from where it was to move south, parallel to the main road and seize the high ground north of Pyawbwe.
- (2) The 48th Indian Infantry Brigade Group was to move down the main road followed by the Divisional Headquarters and the 63rd Indian Infantry Brigade. The latter brigade was to leave the main route south of Yindaw and proceed due south and passing through Yenangyang, attack Pyawbwe from the west.
- (3) An armoured column was to clear Yenaung, if possible, before the 63rd Indian Infantry Brigade reached the place and then to proceed to Ywadan and cut the main road at MS 306 and proceed to Yamethin at MS 300.

The 99th Indian Infantry Brigade Group proceeded to its objective on the night of 31 March. The Japanese resistance was very stiff at Thazi, and even though heavy casualties were inflicted on them, they managed to hold on to the village Thazi. It was clear that a fairly strong force was garrisoning Thazi and hence the 99th Indian Infantry Brigade was instructed to leave a holding force at Thazi before moving to conform to the divisional plan and advance south. On 4 April the 99th Indian Infantry Brigade moved across country parallel with the main road, whilst the 48th Indian Infantry Brigade moved down the road axis followed by the 63rd Indian Infantry Brigade. On the main road the advanced elements of the 48th Indian Infantry Brigade found Kandaung on their line of advance, occupied by the Japanese. They held on to this position until the night of 3/4 April despite all efforts to dislodge them and on the morning of 4 April the Japanese forces withdrew from Kandaung. Meanwhile other troops pushing forward, had captured Lewé, but here also the Japanese forces fought back and held up the advance. Yewé itself was occupied on the evening of 4

April. Meanwhile the armoured column had captured Yenaung on 8 April, but was unable to clear the area of the Japanese. The 63rd Indian Infantry Brigade, therefore moved across the country and harboured about four miles to the south-west of Pyawbwe. The 99th Indian Infantry Brigade continued its advance east and the 48th Indian Infantry Brigade moved back to capture Sadaung. All the brigades were now within striking distance of Pyawbwe. On 9 April, the 99th Indian Infantry Brigade captured the high ground north of Pyawbwe and exploited southwards. The 48th Indian Infantry Brigade advanced along the main road but met with stiff opposition. The fighting continued throughout the day and on the following day Pyawbwe was captured by a concerted attack of the 99th and 48th Indian Infantry Brigades. The 63rd Indian Infantry Brigade got into the south-west corner of the town. The troops now commenced a systematic mopping up and by the morning of 11 April Pyawbwe was cleared. The battle for Pyawbwe was the last really big battle of the operations of the IV Corps and actually sealed the fate of Rangoon. Many other sharp fights and brisk skirmishes took place before Rangoon was reached but it was at Pyawbwe that a co-ordinated effort of the Japanese command was finally shattered and in the later operations the Japanese forces were thrown piecemeal on this axis only in an attempt to delay the advance.

A reference may be made at this stage to the operations of the 19th Indian Division on the left flank of the axis of the IV Corps. The 64th Indian Infantry Brigade of this Division came under command of the IV Corps on 31 March and the remainder of the division on 5 April. The 64th and 98th Indian Infantry Brigades concentrated in the Wundwin area with 62nd Indian Infantry Brigade to the north of it. The division was ordered to take over all protective duties in Meiktila and patrol to the west of Meiktila. In addition it was made responsible for the destruction of all Japanese forces in the area to the east of Wundwin. There was hardly any fighting worthy of the name during the operations of the 19th Indian Division in this period. After some preliminary skirmishing, Thazi was captured on 9 April by the 64th Indian Infantry Brigade operating to the east. Further operations of this division were limited to destroy parties of Japanese, struggling to escape east into the hills.

5th Indian Division takes the lead

It had been decided to halt the 17th Indian Division at Pyawbwe for a week, while the 5th Indian Division was to pass through and continue the advance south. The 5th Indian Division completed its concentration in the Meiktila area by 3 April and immediately made preparations for following up the 17th Indian Division and for passing through it at Pyawbwe with the immediate object of capturing Pyinmana and Toungoo. But as a preliminary to this advance it was necessary to capture Yindaw. The 161st Indian Infantry Brigade was therefore, detailed to capture Yindaw. During the night of 8/9 April all the routes leading out of the village were blocked to prevent the Japanese from escaping in any direction. On the morning of 9 April, troops of the 161st Indian Infantry Brigade occupied Yindaw and on the following day

the 123rd Indian Infantry Brigade with an armoured column passed through to Pyawbwe to take up the advance. The 9th Indian Infantry Brigade (5th Indian Division) remained in Meiktila under command of the 19th Indian Division. On 11 April, using an armoured column as spearhead the 123rd Indian Infantry Brigade passed through the 17th Indian Division at Pyawbwe. The armoured column reached a point south of Yamethin, 300 miles from Rangoon the same day. But when the other columns tried to pass through, the Japanese shelled them heavily. On 12 April one of the now few Japanese air attacks occurred but by the evening of 12 April most of the western half of the town was cleared. The fighting, however, went on and it was only on 14 April that Yamethin was finally captured.

Meanwhile, the engineers were busy constructing a bypass road to the west of the town for the use of the 161st Indian Infantry Brigade which was rapidly closing in from behind. Leaving the 123rd Indian Infantry Brigade to complete the operations in Yamethin itself, the 161st Indian Infantry Brigade pushed forward along the bypass and reached Tatkon by the evening of 14 April, which was cleared on the morning of the following day. No opposition was met until Sinthe Chaung was reached, four miles north of Shwemyo. The brigade harboured to the north of it before resuming its advance. Shwemyo village was captured on 16 April and the armoured column pushing forward met stronger opposition on the Shwemyo Bluff, a hill feature which borders on the eastern side of the road in this area for a few miles. It was difficult for the advance to be continued with the Japanese occupying the Shwemyo Bluff, overlooking the main road. The 123rd Indian Infantry Brigade, after completing the mopping up in Yamethin, moved forward and reached Shwemyo Bluff which the Japanese were holding in some strength and it was learnt that they had been reinforced. On 17 April the 123rd Indian Infantry Brigade made a wide left outflanking movement on to the Bluff from the east and began clearing the position. The 161st Indian Infantry Brigade and the armoured columns continued their move towards Pyinmana. There is no doubt that the Japanese had intended to delay the advance at this sector, but the speed of the 5th Indian Division had taken them unprepared. Meanwhile, the 9th Indian Infantry Brigade of the 5th Indian Division had moved up from Meiktila to Tatkon. The 99th Indian Infantry Brigade of the 17th Indian Division came forward and took over the Shwemyo Bluff area so that the 123rd Indian Infantry Brigade could follow up the rest of the 5th Indian Division with all speed.

The advance on Shwemyo made swift progress and the forward elements reached a location within four miles from Pyinmana early on 19 April. It was decided to leave one battalion to continue the operations in the town while the armoured columns swung south and south-west into the Pyinmana plain. Some opposition was met in these outflanking movements, but it was soon overcome and the spearhead of the column finally reached MS 240, four miles south-east of Pyinmana, the same day. Lewé to the south-west of Pyinmana with its airfield, was captured and was made ready for the flying in of gliders by 21 April. While troops of the 161st Indian Infantry Brigade were

attacking Pyinmana from the north, the 123rd Indian Infantry Brigade moved up to MS 248 and the 9th Indian Infantry Brigade moving south from Tatkon, advancing rapidly along the railway axis, reached north of Pyinmana by 20 April. It was during the fighting around Lewe that the headquarters of the Japanese 33rd Army, entrusted with the task of halting the advance of the IV Corps, finally lost control of the situation. Remnants of its forces were scattered and the Army Headquarters itself narrowly escaped capture. From this point onwards the surviving troops of the Japanese 33rd Army took no further part in the battle, but retreated southwards in a rabble on both sides of the main road, with the IV Corps pressing hard on them.

The next important point on the road to Rangoon was Toungoo, some 60 miles from Pyinmana, and only 187 miles from Rangoon. The plan was that after the capture of Pyinmana, the 123rd Indian Infantry Brigade and the armoured columns of the 255th Indian Tank Brigade should capture Toungoo, to be followed by the 161st Indian Infantry Brigade. The 161st Indian Infantry Brigade concentrated at Thawati, whilst the 63rd Indian Infantry Brigade moved to Pyinmana. Meanwhile, the armoured column followed by the 123rd Indian Infantry Brigade, brushing aside slight opposition along the axis of advance, reached MS 177, two miles north of Toungoo on 22 April. The same afternoon Toungoo airfield was occupied without opposition. This airfield was of considerable importance, as it was only about 166 miles from Rangoon. The air-strip was quickly repaired and put into use.

Meanwhile the 161st Indian Infantry Brigade was following close behind the 123rd Indian Infantry Brigade as it was to take the lead again from Toungoo. After a day's pause on 23 April the 161st Indian Infantry Brigade led the advance on 24 April and the following day both the armoured column and the 161st Indian Infantry Brigade reached the Pyu Chaung crossing unopposed. The bridge here was found destroyed and opposition was encountered on the far bank but it was overcome and by the morning of 25 April Pyu had fallen into Allied hands. Everything was now ready for the 17th Indian Division to pass through.

The final stage of the advance to Rangoon

It was known at this stage that Operation DRACULA, an amphibious landing to the south of Rangoon, had been scheduled for 1 May. Parachute troops were to be dropped south of Rangoon to clear the entrance to the Rangoon river to enable the 26th Division to enter Rangoon from the sea. Less than one week was, therefore, left to cover the 144 miles from Pyu if troops of the IV Corps were to reach Rangoon first. Already the troops were ahead of schedule and there seemed to be just a chance that Rangoon might be reached before 1 May, provided no important bridges had been demolished and the monsoon did not set in. Orders were, therefore, issued for the advance to Rangoon and the seizing of the port with all possible speed. The 17th Indian Division took up the lead again on 25 April. The drive was to become

still more rapid henceforth to enable the division to reach Rangoon before the amphibious operations took place. The 17th Indian Division was to advance as rapidly as possible and after capturing the Pegu and the airfield area was to move to Zayatkwín and then press onwards to Rangoon along the axis Hlegu. The 5th Indian Division was to follow up and attack Rangoon from the north and east. Meanwhile the 9th Indian Infantry Brigade was to fly in from Pyinmana and take charge of Pegu. The 17th Indian Division advanced about 33 miles on 25 April and passing through the positions, reached two miles north of Nyaunglebin without opposition. Scattered parties of Japanese were met, but these were either killed or scattered. The armoured column pushed on and by the evening of 26 April was as far south as Daik-U, only 85 miles from Rangoon. The 63rd Indian Infantry Brigade, closely following up had reached Nyaunglebin by this date. The next day the advance reached MS 62½ where a fairly heavy fighting ensued and lasted the whole day. The advance was continued at breakneck speed and Payagyi (MS 64) was reached on 28 April. It was reported that Payagyi was occupied by Japanese forces and a heavy air-strike was planned on it for 29 April. The 63rd Indian Infantry Brigade put in a frontal attack but there was no opposition and as the troops moved in, they found it had been vacated earlier. The 63rd Indian Infantry Brigade thereafter continued the advance to Pegu. By 1500 hours on the same day a column had already bypassed Pegu and was moving east of Pegu to reach the main road south of the town with the intention of cutting off the road. Pegu was held by a battalion of Japanese troops and some L of C troops from Rangoon. The plan for the attack on Pegu was for the 63rd Indian Infantry Brigade with tanks, to secure the northern half of the town east of the river, after which the armoured column was to capture the southern half from the east. Accordingly some units of the Brigade captured the high ground to the north-east of the town on 29 April, and on the following day secured the whole of the residential area of the town. But the remainder of the brigade nearer the river was held up. During the night the Japanese began to thin out and early on the morning of 1 May the whole of the town east of the river was cleared, but the bridge had been blown up in the night. On 2 May Pegu was cleared and the division regrouped for further advance.

Leaving the 99th Indian Infantry Brigade to hold Pegu, the 17th Indian Division commenced its advance on 2 May and reached MS 41, where only slight opposition was met. The long expected monsoon broke out the same day and torrential rains flooded the whole area. The 48th Indian Infantry Brigade and the main divisional headquarters had crossed the Pegu river earlier, but the 63rd Indian Infantry Brigade following up, was marooned on the other side. Progress beyond MS 40 proved to be rather difficult as the road was extensively mined, but a part of the mined stretch was cleared before nightfall. From MS 40 to Hlegu the progress was very slow. The dwindling hopes of reaching Rangoon first were finally shattered on 3 May when it was learnt that troops of the 26th Indian Division had already captured Rangoon without opposition.

Apart from mined roads resistance by the Japanese was negligible. A roadblock was encountered at MS 38 but this was cleared and Integaw was reached. Passing through Integaw the advanced troops found the bridge at MS 32½ completely demolished. Infantry was now ordered to advance on foot to link up with the 26th Division which, having taken Rangoon was advancing northwards. Most of the troops crossed by swimming or using a bamboo foot bridge on 4 May. The bridge at Helgu had also been blown up but the meeting between the two divisions took place on 6 May at Helgu, 28 miles north from Rangoon.

Earlier on 5 May orders were received by the 17th Indian Division not to move to Rangoon. It was decided that the forward troops of the 17th Indian Division should move up to Pegu where sufficient accommodation was available for the troops to live under cover during the monsoon. Mopping up stray Japanese parties, however, continued. The 48th Indian Infantry Brigade was at Integaw and the 63rd Indian Infantry Brigade was in the area of MS 41. Both these brigades carried out extensive patrolling in all directions.

This brings to a close the story of the attempt to capture Rangoon from the north. The IV Corps had been frustrated in this attempt but it is gratifying to note that they were denied this prize not by the Japanese but by monsoon and by troops of another Indian Division. The Corps had covered 260 miles in 20 days. The bid to capture Rangoon from the north cannot be said to have failed for it was the momentum of the final advance from Pegu which seems to have induced the Japanese garrison from Rangoon to withdraw and thereby enable the DRACULA force to make an unopposed landing from the sea. Although the IV Corps did not actually liberate Rangoon, the re-conquest of Burma was to all purposes effected by the Fourteenth Army and to them must belong the major share of the honour and glory.

Medical Aspect

For a proper appreciation of the medical aspects during this time, two factors must be kept in view; namely the rapidity and length of the advance and the fact that the advance was opposed. There was practically no medical cover behind the casualty clearing stations except the bases in India 200 miles away at the start of the operations.

Only the following resources were available:—

Medical Units

Casualty Clearing Stations	..	2	} With ancillary units i.e. Mobile Surgical Team, Fd Transfusion Unit, Mobile X-Ray Unit, Dental Units, Psychiatric Centre.
Malaria Forward Treatment Units	..	2	

Corps Field Ambulances	..	1
Ind Staging Section (C)	..	1
Bearer Coy	..	1
Sub Depot Medical Stores	..	1
Sec American Field Service MAS	..	1

CCTF Units

Lt Plane sqn	..	1	Consisting of thirty-two—L-5 and four—C-64 aircraft.
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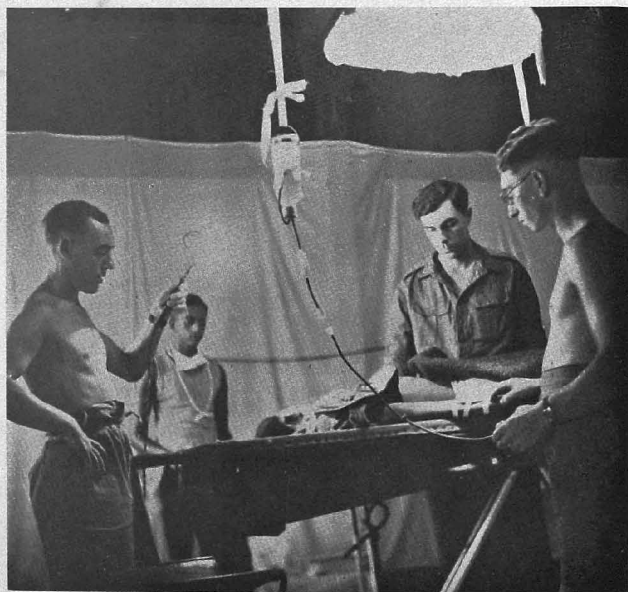


↓
Medical treatment of Japanese prisoners at a Casualty
Clearing Station, Pegu, August 1945.
↑





Medical aid for wounded Japanese, captured by the
7th Indian Division.



13 Casualty Clearing Station in Pegu, June 1945.

Medical Centres close to air-strips were formed by a CCS and MFTU as soon as possible after the site for the FAMO was decided upon. As mentioned in the preceding pages, the advance at first was by units leap-frogging each other, but when this became very rapid in the later stages, a third CCS and MFTU was flown in to give the rear centre enough time to evacuate its patients and pack up. Reception and despatch of patients was done by the Staging Section reinforced by Bearer Company personnel to ensure rapid loading.

Evacuation of Patients

The evacuation of casualties presented a difficult problem but it was solved with the help of L-5 aircraft. As the troops advanced, they constructed light air-strips in forward areas on which the Divisional Field Ambulances established posts for collection of casualties. The aircraft (L-5s) which brought urgent medical supplies took back the cases to the Medical Centre which was situated as near to the CCS as possible in order to avoid long lifts. From the Medical Centre the casualties were transferred to some heavy air-strip from where they could then be airlifted by C-47s. However, due to the uncertainty of the time of arrival of the C-47s, shelters were set up at these air-strips capable of holding 50 to 60 patients, with a provision for small adjustments of dressings, cool drinks and other amenities.

In the beginning casualties were sent to base in empty returning planes which had brought in re-inforcements. Later, however, planes specially designated for the purpose of evacuating casualties were sent and they always had some medical personnel present on the aircraft during the journey.

By all accounts this system worked very well, and the time from the occurring of the casualty to the patient being properly in bed was often reduced to only about three to four hours. The only difficulty experienced was at Meiktila where the casualties were the heaviest, and there was considerable Japanese interference with the main air-strip especially during the month of March 1945. During this time only light planes could be used for evacuation and the distance to the base at Myitche, the nearest centre, was about the extreme limit of these planes. Some difficulty was also experienced in persuading bigger aircraft (C-47) pilots to take casualties as their doing so meant diverting planes to base hospitals which were not sited at normal maintenance bases.

Diseases

Malaria was effectively controlled by suppressive mepacrine where malaria discipline was properly enforced. DBP was also in general use as a repellent against the mite which is the carrier of scrub typhus. Flies and mosquitoes were rarely seen and posed no problem due to the large-scale use of DDT.

As a result of all these measures the health of the troops fighting under IV Corps was remarkably good throughout the campaign, say from October 1944 to May 1945. This is evident from the average sick

rate over the whole period, which was as low as 1.05 per 1,000. The average casualty rate was even lower, being only 0.72 per 1,000. These figures relate to the whole force including the non-fighting troops.

Lessons

The main lessons learnt from the medical point of view, as summarised in the IV Corps report are as follows:—

“ In rapidly moving operations of this type road transport could not be depended on for the forward move of the medical centres. Light Section of the CCS with Surgical Team and Mobile X-Ray unit has first priority and should be flown in at the earliest possible moment. At Toungoo for example the first batch of wounded were received within half-an-hour of the first tent being erected and more continued to arrive as the CCS was built. At Myitche the CCS was full before the last transport planes carrying the CCS were in.

“ It is important to ensure that C-47s are available for casualties. In theory the use of reinforcement planes for casualties should work, but in practice it does not. Either the use of designated planes should be extended or special casualty planes should be provided. ETA rarely coincides with the actual time of arrival and long, hot and tiring waits occur, while the officer in charge of evacuation rushes from plane to plane trying to get accommodation.

“ With a rapid advance under the conditions experienced two medical centres are not sufficient and three are required, the rear one reverting to Army as the formation advances.

“ It is extremely important that staffs should understand the need for the early arrival of the Sub Depot Medical Stores ”.

CHAPTER XXVII

Medical Review

Physical Features and Climate

Till the crossing of the Chindwin river and for about 60 to 70 miles beyond, the operations of the Fourteenth Army had been carried out amongst the jungle clad mountains and densely wooded valleys of the mountains interposing between India and Burma. About 60 to 70 miles east of Chindwin the character of the terrain changes completely and the Fourteenth Army entered an open valley covered with scattered palm trees and low scrub. There were widely scattered villages in this area with patches of cultivation surrounding them. The pagodas, a usual feature of the Burmese countryside, were numerous in these villages. The average rainfall in many places is below 30 inches a year and the land, therefore, is arid and water is scarce. In this area in December, January and February, the climate is delightful with clear warm days and cool nights. This dry belt extends south as far as Magwe on the Irrawaddy axis. As progress towards the south continues, the country becomes less arid, rice cultivation becomes more extensive and tropical forests appear again. In this area of Burma forests and teak plantations are numerous.

The hottest season in Central Burma is just before the rains begin, and in the Irrawaddy Delta in April and May the temperature may rise to about 100 degrees with very high humidity. To the north in the arid plain the temperature may rise to 110 to 112 degrees, but the lower humidity in that area renders the climate less trying. The monsoon breaks over Irrawaddy Delta by the middle of May and it brings down the temperature slightly but the increase in humidity is marked and the climate is extremely unpleasant. The rainfall in the Irrawaddy Delta is very heavy, usually an annual mean of 200 inches.

General medical policy

It was evident from the very beginning that a campaign of the type envisaged in Central Burma would be one of very rapid movement and in view of the difficulties of communications, the main source of maintenance would be by air. A single road L of C from Kalewa to Manipur was totally inadequate to bear the strain of sending forward supplies to the huge force that was to be deployed in Central Burma. A beginning in air evacuation had been made during the isolation of the IV Corps during 1944 in Imphal. It was by this propitious circumstance that air evacuation of casualties until then only resorted to in cases of grave emergency, came to be accepted by force of necessity as a normal means of evacuation. It was, therefore, decided at the very beginning of the campaign that all medical evacuation ex-Burma should be by air and that light aircraft would be used in the forward areas to evacuate casualties to the CCS level. These decisions had the important consequence that the army, during its campaigning period in Central and Southern Burma, was to be provided only with the lightest medical cover and that

no attempt would be made to move forward general hospitals and convalescent depots from place to place during the phase of active campaigning. The frequent moves of general hospitals during the campaigns in previous years had clearly demonstrated that it was unwise to move and install such heavily equipped units in view of the heavy drain on road transport required to move and maintain them. At any rate, it was the experience that at the end of such a move the battle areas would have shifted far ahead and the hospitals could be only approached by air route. Apart from the divisional units, the light medical cover planned to be provided for the Fourteenth Army during the period of active operations was the CCS and the Malaria Forward Treatment Unit. The latter was a unit which had been evolved during the previous campaigns in Burma primarily with the object of holding and treating malarial cases as far forward as possible and returning them to their units. This procedure saved these patients from undertaking a long and arduous trip to the hospital during the acute period of their illness and arriving at advanced base hospitals well on the road to recovery, inundating the already overcrowded and overworked hospitals. But these units could also, in cases of emergency, attend to other casualties as well and facilities existed for their treatment and nursing. There was, therefore, no doubt that they could fulfil other functions than the ones for which they were originally created. A CCS and MFTU in the rear area could normally contain all the casualties evacuated from a corps area.

During the previous campaigns especially in the Arakan, the policy of forming corps medical centres had been evolved and adopted. These centres usually consisted of one or two CCSs together with one or two MFTUs. The usual ancillary units like X-ray, Field Laboratory, Psychiatric Centre, Field Transfusion Units, Dental Units and Neurosurgical Units were added to the corps centre as required. As described in the medical cover for the operations this policy of forming corps centres was also adopted during the present campaign. In general the idea was for two CCSs and two MFTUs, with ancillary units to be allotted to each corps, the remaining CCSs and MFTUs being held in army reserve, though not necessarily closed. As the tide of the battle surged forward the corps centres were usually left far behind, i.e., outside the normal radius of light planes. A new corps centre was therefore formed from the CCSs and MFTUs held in reserve by the army and the CCSs and the corresponding units in the rear corps centre reverted to army reserve after disposing of the casualties they held. If these units in the rear centre were required to move forward before the normal process of natural waste out was completed, then the CCS which was usually the unit required forward was instructed to transfer its remaining casualties to the MFTU and move forward. If the MFTU also was required to move forward before the natural waste was completed then the casualties held by them were evacuated in toto to advanced base hospitals, allowing the MFTUs to move forward. Such mass evacuation sometimes, entailed the loss of some manpower, as cases which could have normally been retained, treated and returned to duty were also evacuated behind the army level, which inevitably meant long delay before these personnel could be available for duty.

With minor variations this was the medical policy followed in the Fourteenth Army during the advance into Burma, which in the majority of cases proved to be satisfactory.

The Health of the Troops

During November 1944 the L of C Command was established separately from the Fourteenth Army and is, for all practical purposes, excluded from this review from the week ending 18 November 1944. The Fourteenth Army consisted of the IV and the XXXIII Corps and these forces remained under command of the army during the whole period of this review, i.e., from 12 November 1944 to 19 May 1945. Consolidated returns of sickness of the armies were available from 17 December until the end of the period under review.

During this period certain divisions were removed from the command of their corps to the direct command of the army. These changeovers were as below.—

- 5th Indian Division under Army Command from 26 November 1944 to 24 March 1945
- 11th East African Division under Army Command from 10 December 1944 to 24 March 1945
- 36th British Division under Army Command from 1 April 1945 to 21 April 1945
- 19th Indian Division from 1 April 1945 to 7 April 1945.

Strengths

During the period under review the average strength of the Fourteenth Army was 190,151 which was made up as follows:—

British troops	..	47,142
Indian troops	..	127,299
African troops	..	15,710
Total	..	190,151

The highest total reached by the army was 250,508 during the week ending 17 March 1945 and the lowest 140,199 during the week ending 9 December 1944.

STRENGTH OF VARIOUS FORMATIONS—TABLE 1

	IV Corps	XXXIII Corps	Army Tps	5th Div	11th (EA) Div
Average weekly strength over whole period	58,673	73,347	36,033	12,661	22,032
Highest strength recorded week ending	79,193	101,455	60,363	19,570	25,000
Lowest strength recorded week ending	31,900	59,650	3,608	8,011	17,851
	30-12-44	19-5-45	23-12-44	30-12-44	3-2-45

The average weekly strength of 36th British Division during the three weeks under command was 16,210 and that of 19th Indian Division during the week it was under Army Command was 16,720.

TOTAL SICKNESS INCLUDING BATTLE CASUALTIES—TABLE 2

	Total cases evacuated	Rate per 1,000 whole period review	Daily rate per 1,000
British Troops ..	18,794	398.66	2.12
Indian Troops ..	36,004	283.62	1.5
African Troops ..	3,117	198.41	1.05
Total ..	57,915	293.56	1.55

The daily rate of sickness fell from 2.45 per day per thousand in November to 1.30 per day per thousand by the end of December 1944. Concurrent with this was the fall in malarial rate from .85 to .49 during the same period. From 25 December 1944 the battle casualty rate rose and in consequence the total sick rate rose gradually to 2.15 per thousand per day which was reached during the week ending 24 March 1945. After this the casualty rate gradually fell and the total sick rate also correspondingly declined to the lowest rate recorded, namely 1.25 per thousand per day towards the end of April 1945.

Malaria and NYD fevers

Malaria and NYD fevers head the list of single causes of morbidity with 24.09 per cent. of all causes, the average rate of .38 per thousand per day or 73.37 per thousand for the whole period. This incidence combined with battle casualties which accounted for 22.78 per cent. constitutes 46.87 per cent. or nearly half of all the cases evacuated during this period. It is noteworthy that figures for medical admissions followed closely that for malaria with indication that malaria was the chief medical problem. Malaria accounted only for six deaths out of some 45,000 cases of illness.

The total army rate fell from .94 per thousand per day from 18 November to .23 per thousand per day in the first week of March 1945. Thereafter it rose slightly to .32 by 21 April 1945. For virtually half of this period the rate was below .30 and for a further four weeks the rate was below .4. It is interesting to note that the rate of malarial admissions in the Fourteenth Army before the separation of the Fourteenth Army and the L of C Command was 1.4 and 1.5 per thousand per day, and for the week ending with 11 November 1944 the rate was 1.19. This drop is undoubtedly due to the enforced use of mepacrine by all troops under the Fourteenth Army Command from 18 November 1944, and the rate fell and remained low in early spring when relapses and fresh cases were excepted. Malaria and NYD fever which occurred in the various formations is shown below:—

TABLE 3

	Total cases	Rate per 1,000	Daily rate per 1,000
IV Corps	3,837	65.39	0.34
XXXIII Corps	6,533	89.07	0.47
Army Troops	1,849	51.31	0.27
5th Indian Division ..	851	67.21	0.35
11th East African Division	699	31.72	0.16
36th British Division ..	122	7.52	0.04
19th Indian Division ..	61	3.25	0.01
Army Total	13,952	73.37	0.38

In the case of the 5th Indian Division the high rate was mainly in the period 2 December 1944 to 20 January 1945 whilst the division was at rest and the personnel were being granted leave. During this period 548 cases of malaria and NYD fever were evacuated. Of 84 cases in hospital at one time from the 5th Indian Division, 52 were admitted within three days of returning from leave. The rate of malaria during this period varied from .6 to 1.61 per thousand per day. Malaria accounted practically for 50 per cent of all admissions from the divisions during this period.

7th Indian Division

The figures were higher than normal rates throughout the whole period, 128 cases being the maximum notified for one week. The lowest weekly number of cases recorded was 30 for the week ending with 31 March 1945.

19th Indian Division

As with the 7th Indian Division the rate was high throughout the whole period, the highest weekly total being 172 for the week ending 13 January 1945, and the lowest 22 for the week ending 17 February 1945. Malaria accounted for approximately 30 per cent. of the total admissions from this division. The rate in the division continued to rise to a peak at the end of the period under review and was subsequently investigated. The 17th Indian Division was outstanding with the lower rate of 336 for malaria during this whole period.

Dysentery and Diarrhoea

These conditions accounted for a large number of admissions—but it may be said—not as large as might have been expected taking into consideration the nature of the campaign and the toll which these diseases took of manpower in 1944. The total number of cases evacuated was 4,398, i.e., 7.61 per cent. of total admissions—0.12 per 1,000 per day.

This total was distributed over the various formations as follows:—

	Total cases	Rate per 1,000 for period	Daily rate per 1,000
IV Corps ..	1,247	21.25	0.11
XXXIII Corps ..	2,182	29.74	0.16
Army Troops ..	434	12.04	0.06
5th Indian Division ..	84	6.63	0.03
11th East African Division ..	349	15.84	0.08
36th British Division ..	69	4.25	0.02
19th Indian Division ..	33	1.81	0.009
Total ..	4,398	23.11	0.12

From a peak figure of 0.21 per 1,000 per day for week ending 18 November 1944, the rate fell gradually to 0.07 and remained within the 0.07-0.12 rates until 24 February 1945, when it rose slightly to 0.18 for 21 April 1945, and then fell again.

As with malaria and NYD fevers the rate of XXXIII Corps was in general higher than that of IV Corps. Army troops in the main, had the lowest rate. This may be due to the fact that Army Troops are generally more static and able to devote more attention to hygiene.

High rates of Dysentery and Diarrhoea were recorded in the 11th East African Division and the 19th Indian Division.

In the 11th East African Division, the cases were spread evenly over all units—and there is no doubt that the hygiene standard of the Division left much to be desired.

In the 19th Indian Division, the cases were spread over the whole period. All units were affected. The general health of this division was most unsatisfactory.

Low rates in Dysentery and Diarrhoea were recorded in the 17th Indian Division with 132 cases from 3 February to 19 May 1945. In Malaria and Dysentery cases this Division had an excellent record.

5th Indian Division, 92 cases from 23 November 1944 to 24 March 1945. Unfortunately from 31 March 1945, cases increased considerably in the 5th Indian Division.

The maintenance at a low level of the rate of Dysentery and Diarrhoea was undoubtedly due to the early use of sulphaguanidine in forward areas down to RAP level in bacillary dysentery and diarrhoea. A large amount of widespread morbidity was undoubtedly due to Diarrhoea which did not necessitate evacuation for medical treatment, mainly water-borne in character. Improved hygiene standards in the field are to a certain extent reflected in the low rates recorded.

Venereal Diseases

The incidence of venereal diseases throughout the campaign was low, which affords great credit to all concerned. The total number

of cases notified was 1,364 or 2.35 per cent of the total army sick—i.e., 0.04 per 1,000 per day.

Cases by Formations:—

	Total cases	Rate per 1,000	Daily rate per 1,000
IV Corps	393	6.69	0.03
XXXIII Corps	525	7.15	0.03
Army Troops	316	8.77	0.04
5th Indian Division	62	4.89	0.02
11th East African Division	67	3.04	0.01
36th British Division	1	0.06	..
Total	1,364	7.16	0.04

From 0.08 per 1,000 per day for week ending 18 November, 1944 the rate fell gradually to 0.02 per 1,000 per day for week ending 16 December 1944, from which date the rate remained between 0.02 and 0.04 for the whole period. IV and XXXIII Corps rates were approximate to each other from 0.09 to less than 0.01. Army troops had a higher rate than either Corps—rates up to 0.10 at week ending 31 March 1945 and 0.9 and 0.8 recorded for several weeks. The high rate in Army Troops was due mainly to cases occurring in RE Units, contracted before entry into the Army area. Of 782 cases investigated—156, approximately 20 per cent, were diagnosed as syphilis, the remaining 80 per cent being other forms of venereal diseases.

Of formations the 20th Indian Division notified the highest number of cases, and the 5th and 17th Indian Divisions notified the lowest number of cases.

Special Diseases and Conditions

The four main special diseases met with during the campaign were Typhus Fever, Infective Hepatitis, Smallpox and Cholera.

(i) *Typhus Fever*

768 cases were notified, distributed as under:—

	BOs	BORs	Indian troops	African troops	Total
IV Corps	6	22	55	..	83
XXXIII Corps	10	131	185	143	469
Army Troops .. .. .	..	2	27	..	29
5th Indian Division .. .. .	..	50	14	..	64
11th East African Division .. .. .	..	1	..	122	123
Total	16	206	281	265	768

Two cases of 'murine typhus' were reported, the remainder all being mite borne or scrub typhus.

The peak was reached by 2 December 1944 when 96 cases were notified. From that time the weekly incidence fell gradually until week ending 10 February 1945 when only two cases were notified. For the week ending 5 May 1945 no cases were notified.

Up to 31 March 1945 the number of deaths notified were 54; British Troops 18; Indian Troops 23; African Troops 13.

Death rate was 7.2 per cent in 748 cases notified up to 31 March 1945.

Death rates—British Troops 8.5 per cent; Indian Troops 8.5 per cent; African Troops 4.9 per cent.

No statistics are available of deaths which might have occurred in patients evacuated out of the Army area. The death rate of cases in XXXIII Corps was estimated as:— Total 9.1 per cent; British Troops 12.15 per cent; Indian Troops 9.4 per cent; African Troops 2.0 per cent.

Typhus Fever reached high proportions in the 5th Indian and 11th East African Divisions. In the 5th Indian Division 101 cases occurred between 2 December 1944 and 21 January 1945, when the division was at rest. Anti-typhus discipline was not probably rigorously enforced. The 11th East African Division had 900 cases during the monsoon campaign down the Kabaw Valley.

Attention was drawn to anti-typhus discipline in the Division—a number of African Other Ranks being allowed to walk about bare-footed. The 19th, 20th and 7th Indian Divisions reported 65, 35 and 31 cases respectively and two cases only were notified from the 17th Indian Division. The high mortality caused by this disease had a considerable effect on morale.

Dibutyl Phthalate was available in ample quantities and a drill for its application made known to all ranks. While the disease was at its height the drill was taken into use—but it was noted that it soon lapsed immediately the rate fell. It must be applied regularly to produce results. It was hoped that arrangements could be made for the even distribution of DBP on clothing before issue to the troops.

The same tendency to laxity as with the application of DBP was noticed in the wearing of protective clothing—trousers with short puttees. Every means was sought to relax the rule to permit wearing of shoes, shorts, etc., and in this respect officers were the main offenders—whose example is immediately followed by other ranks. In field areas protective clothing should be worn at all times. The strict attention needed to the selection of camp sites and anti-rat measures needs no emphasis.

(ii) *Infective Hepatitis*

Six hundred and twenty-nine cases of this infection were reported, distributed among formations as follows:—

IV Corps	267
XXXIII Corps	235
Army Troops	28
5th Indian Division	51
11th East African Division ..	25
36th British Division	12
19th Indian Division	11

These cases were not reported separately by categories of British, Indian and African Troops.

The 19th Indian Division reported the highest number of cases. The figures shown for 19th Indian Division in the above Table were reported while the division was under direct command of Army, the remaining cases occurred while the division was under command of Corps.

The 2nd British and 17th Indian Divisions notified the lowest numbers of cases, 9 and 16 respectively.

(iii) *Small-pox*

Small-pox accounted for 198 cases as follows:—

	BOs	BORs	Indian	African	Total
IV Corps	2	8	38	..	48
XXXIII Corps	6	26	72	5	109
Army Troops	1	6	32	.	39
5th Indian Division .. ..	..	..	1	.	1
19th Indian Division ..	..	.	1	..	1
Total	9	40	144	5	198

Small-pox commenced to appear towards the end of January 1945, rapidly reaching epidemic proportions, 28 cases being notified for the week ending 31 March 1945, from which date the incidence fell gradually to the end of the period of the campaign. Thirteen deaths were reported: British troops 6; Indian troops 4; and African troops 3; a high death rate in British and African Troops.

One formation, the 7th Indian Division, accounted for 45, nearly 25 per cent of the total. Army Troops, IV Corps Troops and XXXIII Corps Troops accounted for 39, 15 and 33 cases respectively. Two cases only were notified from the 5th and 17th Indian Divisions.

Small-pox was endemic among the whole of the civilian population in the areas in which operations were taking place. Widespread civilian vaccinations were undertaken, 5,000 and 10,000 doses of vaccine weekly were issued to IV and XXXIII Corps areas respectively, and at one time up to 26,000 civilians were being vaccinated weekly in the Mandalay-Shwebo area.

Considerable number of reinforcements arrived in operational areas unprotected, from India and the United Kingdom. This was particularly noticeable in the case of 1/11 Sikhs arriving at the 7th Indian Division

from Nowshera and Chindwara. Signal Corps reinforcements from the U.K. were also found to be unprotected, resulting in one fatal case.

Two checks carried out at Reinforcement Camps showed 20 out of 239 unprotected and 19 out of 169 unprotected. A large number of cases occurred in isolated units—as evidenced by the considerable number of cases notified in Army and Corps Troops—10 cases from 552 Indian Infantry Workshop Indian Electrical Mechanical Engineering, of which two were fatal in April 1945. These units are usually dependant upon neighbouring medical units for medical attention, having no medical officer of their own. The relatively small number of cases is proof of the efficiency of protection by vaccination in view of the high epidemicity among the Burmese civilians.

It was strongly emphasised that it was the responsibility of every Commanding Officer to ensure that 100 per cent of the personnel of his unit are protected.

(iv) *Cholera*

From 31 March 1945, until the end of the campaign 69 cases were notified:—

	BOs	BORs	IORs	African Troops	Total
IV Corps .. ..	..	1	4	..	5
XXXIII Corps ..	3	1	14	..	18
Army Troops ..	..	..	20	..	20
36th British Division ..	..	10	16	..	26
Total ..	3	12	54	..	69

There was no incidence of Cholera in the Army until 31 March 1945—and from that period until 19 May, 1945 four distinct outbreaks occurred.

The first outbreak on 31 March was among personnel of 20th Indian Division of XXXIII Corps. 39 cases of acute gastro-enteritis occurred spread over 17 units of the Division, of these 16 were indistinguishable from Cholera and were notified as such. They occurred along the Chaungywn-Kyaukse axis and in a triangular area between Ngazun, Singu and Kyaukse. Specimens of stools were sent to 23 Field Laboratory for examination, but all were negative, due no doubt to the time taken to transport the specimens from the forward areas to the field laboratory, situated at that time near Sagaing. Cholera was epidemic among the civilian population at that time, 87 cases with 11 deaths having occurred at Letpan nearby. Ten deaths were notified, one British and nine Indian troops.

The probable source of infection was drinking untreated water from the river and canals in this area. Three dead Japanese bodies in an advanced degree of decomposition were recovered from the canal in this region.

Peak periods on the 14 and 28 of April were caused by the outbreaks in the 36th British Division and Army Troops which occurred concurrently. Cases in the 36th British Division occurred around Kandaw. The source of infection was drinking from unauthorised sources. A number admitted to drinking water from a nullah near some workshops in the area. A divisional order was in force at the time that all drinking water was to be boiled. Stools were examined from all cases at 9 Field Laboratory and four positive results were found. Three of the positive cases were found to be overdue for inoculation, not having received cholera inoculation since July to September 1944.

Army Troops' cases occurred on the Myotha-Myingyan axis. Eleven cases were from 244 Line Construction Company (Signals). This unit had not received cholera inoculation before entering the Army area. All ranks were inoculated when cholera was suspected. There was one death. It was considered that the infection came from water drunk *en route*, or from water melons which were being purchased in considerable quantities by men in the area. The remaining nine Army cases occurred in units in Myingyan.

Various villages were declared infected with cholera among civilians from time to time. Seven cases notified among civilians in Kywe-gyan near Myingyan, with three deaths; and in Nyaunglebin, on the main Army L of C there were thirteen cases and three deaths. Shwebo and Sagaing were also infected. There was a minor epidemic of Gastro Enteritis in the 7th Indian Division at the end of April, but no cases of cholera were reported.

The use of sulphaguanidine in all these cases, it is felt, may have some effect upon the negative findings in the stool examinations.

(v) *Chicken-pox, Diphtheria, Schistosomiasis and Mumps*

Cases were notified as follows:—

	Chicken-pox	Diphtheria	Schistosomiasis	Mumps
IV Corps ..	4	1	..	9
XXXIII Corps ..	44	31	..	6
Army Troops ..	18	..	..	2
5th Indian Division ..	6	..	..	..
11th East African Division ..	1	..	39	2
Total ..	73	32	39	19

Chicken-pox cases occurred sporadically, no particular formation being affected and no epidemics reported, four cases were notified among British troops and 68 among Indian troops.

Of the 32 cases of diphtheria 26 were among British troops, a minor epidemic of fourteen cases occurring in RA units at the end of May 1945.

Schistosomiasis cases were all recurrences, no fresh cases being reported. One British other rank who had been in East Africa was affected and the remainder were East African Troops.

Sixteen cases of Mumps occurred in Indian Troops.

(vi) *Enteric Group Fevers, Cerebro-Spinal Fever, Leprosy and Pulmonary Tuberculosis*

	Enteric Fevers	Cerebro-spinal Fever	Leprosy	Pulmonary Tuberculosis
IV Corps ..	2	5	1	3
XXXIII Corps ..	6	..	1	3
Army Troops ..	1	3	5	..
5th Indian Division ..	..	1	..	..
Total ..	9	9	7	6

In five cases of Enteric Group of Fevers, including one officer, occurring in British troops, all cases were found to be unprotected. Four cases occurred among Indian troops, only two of which were found to have up-to-date inoculation histories.

Cerebro-Spinal Fever—Four cases occurred among Indian troops and the rest among African troops.

(vii) *Other conditions*

Paratyphoid Fever	..	2 cases—1 BT, 1 IT
Acute anterior Poliomyelitis	..	4 cases—1 BT, 3 IT
Kala Azar	..	7 cases—1 BT, 1 IT, 5 African
Measles	..	5 cases—2 BT, 3 IT
Leptospirosis	..	4 cases—all IT
Scarlet Fever	..	1 case—BT

There were four cases of snake bite reported up to 31 March, eighteen cases of gas gangrene had been reported on the official form, but undoubtedly many more cases occurred. There were seven deaths from gas gangrene and three from snake bite.

(viii) *Summary, Special Diseases and Conditions (Actual Numbers)*

	IV Corps	XXXIII Corps	Army Troops	5th Div	11th (EA) Div	19th Div	36th Div	Total
Typhus fever ..	83	469	29	64	123	..	..	768
Infective Hepatitis	267	235	28	51	25	11	12	629
Small-pox ..	48	109	39	1	..	1	..	198
Cholera ..	5	18	20	..	..	..	26	69
Chicken-pox ..	4	44	18	6	1	..	..	73

(Contd.)

	IV Corps	XXXIII Corps	Army Troops	5th Div	11th (EA) Div	19th Div	36th Div	Total
Diphtheria ..	1	31	..	..	..	..	..	32
Schistosomiasis ..	..	..	..	..	39	..	..	39
Mumps ..	9	6	2	..	2	..	..	19
Enteric fever ..	2	6	1	..	..	..	..	9
Cerebro-spinal fever	5	..	3	1	..	..	..	9
Leprosy ..	1	1	5	..	..	..	..	7
Pul. Tuberculosis ..	3	3	..	..	..	..	..	6
Paratyphoid fever..	..	..	1	..	1	..	..	2
Acute anterior poliomyelitis ..	4	..	..	..	..	..	..	4
Kala Azar ..	2	..	..	..	5	..	..	7
Measles ..	..	4	..	1	..	..	..	5
Leptospirosis ..	..	4	..	..	..	..	..	4
Scarlet fever ..	1	..	..	..	..	..	..	1
Encephalitis Lethargica ..	..	1	..	..	..	..	..	1
Snake bite ..	2	1	1	..	..	..	..	4
Gas Gangrene ..	11	7	..	..	..	..	..	18
Total ..	448	939	147	124	196	12	38	1,904

Total 1,904 cases equals 3·29 per cent of the total Army admissions.

By Formations

	Total cases	Rate per ● 1,000	Rate per 1,000 per day
IV Corps ..	448	7·63	0·04
XXXIII Corps ..	939	12·8	0·06
Army Troops ..	147	4·08	0·02
5th Indian Division ..	124	9·87	0·05
11th East African Division	196	8·89	0·04
19th Indian Division ..	12	0·64	0·003
36th British Division ..	38	2·34	0·12

It is noteworthy that no single case of plague was notified from military personnel, although several villages on the line of operations were affected.

All Other Causes

These account for the remaining 39·9 per cent of all total admissions, 23,099 admissions. The main diseases and conditions with numbers of cases notified were:—

Circulatory Diseases	..	..	186
Common cold	..	..	1,390
Dengue fever	..	..	53
Diseases, ear, nose and throat	..	..	872
Effects of heat	..	..	113
Tonsillitis	..	..	524
Other digestive diseases	..	..	1,356
Influenza	..	..	137
Mental diseases	..	..	1,055
Rheumatic fever	..	..	34
Major septic diseases	..	..	108
Minor septic diseases	..	..	2,087
PUO	..	..	85
Respiratory diseases	..	..	1,892
Scabies	..	..	661
Other skin diseases	..	..	1,459
Trachoma	..	..	46
Other eye conditions	..	..	986
Other local injuries	..	..	3,829
Pneumonia	..	..	196
Total			17,069

Attention was drawn to the high numbers of local injuries, almost equal to the total admissions for Dysentery and Diarrhoea. Minor septic diseases also were a cause of high admissions. The total number of cases of Scabies was remarkably low. Only one case of Pediculosis required evacuation.

Summary

FOURTEENTH ARMY

	Number	Rate per 1,000	Rate per 1,000 per day	Percentage
Total sickness	57,913	304.57	1.62	100
Battle casualties	13,196	69.41	0.39	22.78
Sickness less battle cas's	44,717	235.16	1.25	77.22
Malaria and NYD fevers	13,952	73.37	0.39	24.09
Dysentery and Diarrhoea	4,398	23.11	0.12	7.61
Venereal Diseases	1,364	7.16	0.03	2.35
Special Diseases	1,904	10.01	0.05	3.29
All other causes	23,099	121.51	0.64	39.88

ARMY TROOPS

	Number	Rate per 1,000	Rate per 1,000/day	Percentage
Total sickness	5,147	142.84	0.76	100
Battle casualties	101	2.80	0.01	1.96
Sickness less battle cas's ..	5,046	140.04	0.74	98.04
Malaria and NYD fever ..	1,849	51.31	0.27	35.92
Dysentery and Diarrhoea ..	434	12.04	0.06	8.43
Venereal Diseases	316	8.77	0.04	6.14
Special Diseases	147	4.08	0.02	2.87
All other causes	2,300	63.84	0.34	44.68

IV CORPS

	Number	Rate per 1,000	Rate per 1,000/day	Percentage
Total sickness	19,909	339.30	1.80	100
Battle casualties	6,596	112.41	0.59	33.12
Sickness less battle cas's ..	13,313	226.89	1.20	66.88
Malaria and NYD Fever ..	3,837	65.39	0.34	19.27
Dysentery and Diarrhoea ..	1,247	21.25	0.11	6.26
Venereal diseases	393	6.69	0.03	1.97
Special diseases	448	7.63	0.04	2.25
All other causes	7,388	125.93	0.68	37.13

XXXIII CORPS

	Number	Rate per 1,000	Rate per 1,000/day	Percentage
Total sickness	26,974	368.66	1.95	100
Battle casualties	6,334	86.35	0.46	23.46
Sickness less battle cas's ..	20,640	282.31	1.49	76.54
Malaria and NYD Fever ..	6,533	89.07	0.47	24.23
Dysentery and Diarrhoea ..	2,182	29.74	0.15	7.72
Venereal diseases	523	7.15	0.04	1.95
Special diseases	939	12.8	0.07	3.48
All other causes	10,463	143.55	0.75	39.16

In all sections it is seen that the record of sickness of IV Corps is better than that of XXXIII Corps. Army Troops ratios are better than those of either Corps excepting in the case of Venereal Diseases. The 19th Indian Division, whose record of sickness throughout was unsatisfactory, was for the greater part of the campaign under XXXIII Corps.

The 17th Indian Division, whose health record was excellent was under command of IV Corps.

Deaths

One thousand seven hundred and fortyseven deaths were reported through medical channels during the period, British troops 566; Indian troops 1,082 African troops 99. Approximately 80 per cent of these cases were 'Killed in Action'. The official number 'Killed in Action' from 1 January to 19 May 1945, was 3,050; Officers 177 and Other Ranks 2,873. A considerable number of cases was evacuated out of the area and details were only available of deaths which took place in medical units in the Army Command—details of which are available only up to 31 March 1945.

Hygiene

On the whole hygiene standard could be considered satisfactory. Very few instances of bad unit hygiene were noted. With the introduction of DDT there was a growing tendency in units to consider that this abolished the necessity for observance of hundred per cent hygiene standard. Such was the publicity that it was thought that DDT might convert a hopelessly insanitary area into something of a health resort. It was impressed on all concerned that DDT is complementary to observance of unit hygiene and in no way replaced it. All refuse was instructed to be burnt before final disposal, wherever this was possible. Otherwise, burial was the usual method adopted. This in practice led to much fly breeding as it was the invariable custom with the Burmese to dis-inter all refuse buried in swill pits etc., while searching for food.

Bathing

Facilities for bathing in rivers and canals were always available. But it would have been pleasing to see more mobile bath units on the pattern held by the 20th Indian Division and the 2nd British Division. Mobile bath units in these divisions worked under the supervision of their respective hygiene sections and in conjunction with the divisional ordnance branch which issued new clothing to the personnel after the bath.

Rations

These were on the whole satisfactory particularly for the forward troops. There were periods when the troops at army and corps level were issued reduced scales of rations. It was impressed that the ration should always be fully up to the scale particularly as regards fresh meat, vegetables and fruit if a satisfactory state of health was to be maintained under conditions similar to those that existed during the campaign. Amenities at the time were not satisfactory, there being serious shortage of items such as cigarettes, razor blades, etc. A satisfactory supply of canteen items is a most necessary adjunct to the morale and health of the fighting troops

Role of Field Hygiene Sections

During the major part of the campaign the following field hygiene sections were under command of the Army:—

2nd British, 7th, 19th, 26th, 31st, 32nd, 36th, 44th, 48th and 50th
Indian Field Hygiene Sections.

The 71st East African Field Hygiene Section was also allotted to the army. These hygiene sections did excellent work even in spite of great difficulties.

The following were the main shortcomings:—

- (a) Deficiency of personnel. There was an acute shortage of personnel, especially in the categories of BORs and tradesmen. At times there was a deficiency in some units up to 25 per cent;.
- (b) Deficiency of equipment. Earth Augurs, Disinfectors and Horrock's Boxes—all highly essential items were not up to the scale in 11 sections. Chests of tools were deficient in three sections.

The stores like timber, wire gauze, nails, etc., were short of supply and the field hygiene sections experienced considerable difficulty as these were essential materials. It was suggested that a definite allotment of these materials should be made to all field hygiene sections instead of leaving them to fend for themselves.

Training of personnel from units was conducted by hygiene sections whenever time permitted. Demonstrations on hygiene appliances were also held for unit personnel. The common feature of relying on the hygiene section for unit sanitation was also evident in this theatre. The fact that hygiene sections are specialised units and not a general purposes formation or labour company, was not fully realised. They were allotted the task of cleaning areas which were not the particular responsibility of any individual unit. These and other tasks made considerable inroads into the efficiency of field hygiene sections and it was recommended that the field hygiene sections should conform to their primary tasks.

Water Supplies

The locations of water-points were changed, at times almost daily, taxing to the utmost the limited engineering resources. Probably this was inevitable in view of the fast advance of the Fourteenth Army once Meiktila fell. The water trucks were of old design and even the few that could work were hard pressed for time as the water-points had to serve for innumerable units. In a campaign of this kind ample resources of mobile water purifiers are essential. Water-points in the rear areas were also unsatisfactory. They lacked sedimentation tanks and the tanks available for sterilisation were not of sufficient capacity to ensure efficient sterilisation.

Burma is extremely well-supplied with wells and there was a tendency to use these unauthorised sources of water supply. They were not protected and sentries posted for them were not conversant with their duties and had neither the authority nor the personality to enforce strict

water discipline. These wells were used for bathing and for washing purposes as well, which was highly objectionable. A case of poisoning of wells was reported south of Meiktila where the water on analysis was found to contain arsenic. This was the only instance of water poisoning throughout the whole campaign and was probably caused by the dumping of medical supplies by the Japanese in order to prevent them from falling into the Allied hands.

SURGERY IN THE FOURTEENTH ARMY

From rather humble beginnings a very elaborate and extensive surgical cover was ultimately developed for the Fourteenth Army. It was a creditable and significant record of achievement in the face of climatic and geographical difficulties such as were seldom faced before by the medical services. During the advance into Burma the forward surgery reached a very high standard. A brief resume of the development of surgery in the Burma campaign is essential for a full appreciation of the final surgical set-up in the Fourteenth Army.

The surgical resources of the Fourteenth Army were not adequate in the early days; the number of surgical teams were strictly limited and hardly half the number of units as laid down in the scale were available at any particular time. Most of the surgical specialists were also junior men in their profession and they had little or no opportunity to deal with battle surgery.

The surgical experience in forward areas which ultimately shaped the surgical practice in the battlefield was largely based on the recorded experience of surgeons in the Western Desert forces. The results of surgery in the Western Desert campaigns had been so uniformly accepted that they were adopted in toto and given wide application in other theatres, especially in Burma. The forward surgeons of the Fourteenth Army at first believed that the modern missile was dry owing to its great heat. It was held that its high velocity led to the splitting up of the clothing and that fragments of the soiled material were not usually conveyed into the depths of the wound. Secondary infections by pathogenic organism were therefore considered to be the only source of infection. This infection was believed to come either from the surrounding skin or by direct introduction of the organisms at subsequent inspections and dressings. In either case this infection was largely preventable. Experience in the Western Desert also gave the impression that a formal excision of the wound was unnecessary and might even be dangerous. The only precaution against wound sepsis was early and thorough cleansing of the skin, a limited trimming of the wound, application of local sulphanilamide and the provision of an occlusive dressing. In the Fourteenth Army the casualties, after this initial treatment, began a long and arduous journey by road, rail and water to the base hospital of the India Command. There was hardly any facility for holding the casualty in the forward area and treating him there. Medical facilities *en route* were seriously limited. The wounded passed through transit hospitals one after the other, and by the time he reached the base hospital where definitive treatment could be begun, a period of about six weeks had

elapsd. The transit hospitals only staged the casualties and detained those patients who were unfit for further travel. The treatment here was not quite satisfactory. This system of evacuation was conducive to secondary infection. After going through such a system of evacuation, it was not surprising that haemothoraces became infected and osteomyelitis became established in fractures by the time the base hospital was ultimately reached. It did not take long to realise that the wounds sustained in the humid and mountainous jungles of Burma were a different proposition from those of the desert and that the Japanese missiles had the habit of carrying not only clothing and equipment, but also jungle debris, leaves and dirt into the deeper parts of the wound.

The answer to these problems was a reversal of the policy of the limited surgery and emphasis on the need for scrupulous primary attention to the wound and the danger of relying on local sulphanilamide and occlusive dressings. This change-over was accomplished slowly and by the time the Imphal campaign concluded there was a steady and significant improvement, as by this time most of the forward surgeons were convinced that excision was a practical proposition in forward areas. It was brought home to all that there was no substitute for early, efficient and radical surgical treatment. As a result of the experience, large-scale, delayed primary suture of wounds was introduced. It is interesting to note that at this stage the same type of surgical treatment was being carried out in the West, especially in the Italian theatre. It was also possible at this time to allocate the accommodation in the advanced base hospitals for this type of surgery. But certain other factors also contributed to the general improvement by the end of 1944, namely, air evacuation, better surgical cover, improved surgical environment and the use of penicillin.

Air evacuation: In this campaign, especially after the siege of Imphal and Kohima, air evacuation was the only method of getting casualties back to the rear medical units. In fact air evacuation was pushed as far forward as the MDS level. This was also the only practical method in Burma, with its several hundred miles of roadless and railless mountains and jungles which interposed between the forward units and advanced base hospital. Light aircraft evacuated casualties in the forward units to the CCS cover and from there medium aircraft, like Dakotas, brought them to the advanced base hospitals. This evacuation for the most part was regular and adequate and usually the casualties reached the base hospital within 36 to 48 hours of wounding which made it possible to give practically every evacuable casualty the advantage of delayed primary suture.

Better surgical cover: Although surgical resources could not be really considered as totally adequate until the closing phases of the campaign, the improved tactical handling of these units and the best allocation of surgical potential ensured a uniform high standard of surgical treatment.

Improved surgical environment: At the best of times and with adequate resources the problems of providing surgical cover in the jungles was extremely difficult. But in this phase of campaign the army had

debouched into the Central Burma plain, a dry, flat, open expanse of country and the surgical units were able to find good accommodation, ample water supply and the regular supply of transfusion stores. The whole atmosphere itself had been totally changed and was cheerful.

Use of penicillin: By November 1944, Penicillin became freely available and was extensively used. It is needless to recount in this context the revolutionary change that penicillin brought about in surgery.

Survival rate: A total of 8,178 battle casualties were admitted to surgical centres during the first three months of 1945 and amongst these there were 394 deaths. This represents a survival rate of 95 per cent and compares favourably with the results of other theatres; for example the survival rate in Central Mediterranean Force during January to November, 1944, was 95.7 per cent and in the British Army in France, it was 98.2 per cent. This statistical computation is open to question, but is only quoted to show that the wounded soldier who survived to reach a medical unit in this front had as good a chance of ultimate recovery as any other battle casualty in other theatres.

Relation of forward surgery to delayed primary suture: By the end of the campaign it was established that delayed primary suture was the best means of dealing with war wounds. However, it actually was only one stage in the management of the wound. Penicillin was a powerful adjunct in certain cases but in many instances the foundations of success were laid in the forward areas and depended not only on the early operative work but also on the adequacy of the administrative, and executive arrangements to ensure that the primary operation was done really early. In general terms, the policy was to get the wounded men to the surgeon as soon as possible and after the primary operation to evacuate him with all speed to the advanced base hospitals. Those cases which could not be evacuated because of the gravity of their general condition were retained in forward areas until fit to travel. The types of cases retained forward in the army were: (1) abdominal wounds, (2) chest wounds, (3) cases of specific wound infection established or suspected, for example, gas-gangrene, tetanus, (4) cases of damage to the main arterial supply to the limbs in which there is doubt about the efficiency of collateral circulation, (5) severe burns, and (6) injuries associated with severe shock, e.g., wounds of muscles. All other types of patients were usually evacuated on the day following the operation and these normally reached the base hospitals within the third day of wounding. The results of the surgical treatment of the casualties from the base hospitals were uniformly encouraging and proved that the clinical and administrative surgical arrangements during this phase of the campaign had been adequate and satisfactory.

The most predominant factor in battle surgery is the time element which connotes the period that elapses between the infliction of the wound and the arrival at a surgical unit. If the interval is short then the results of surgery are correspondingly good. This is usually applied in cases of more serious wounds, but it is forgotten that this applies with equal seriousness to even the most minor wounds. As a matter of fact the minor wound is often the more important one from the military point of view

since, if adequately treated, the casualty could return as an effective fighting individual to the front again in a very short time. It should, therefore, be the aim of all the surgical services to ensure operation in all wounds. The evacuation by the light planes in the Burma campaign enabled the casualties to reach the CCS level usually during the same day. But during the night, normally between 1700 to 0800 the next day (i.e. about 15 hours) the light plane service ceased to function and the casualties had to be held by the field ambulance. This postponed the early operative treatment of a large number of casualties and this drawback had to be compensated by a modification of the role of the mobile surgical unit.

The mobile surgical units functioned best attached to a CCS, but they were attached most frequently to an MDS during operations in view of exigencies. The MDS with the MSU usually functioned near the light air-head. This combination used to be referred to as an advanced surgical centre and during rush periods an effort was made to provide at least two surgical teams, or sometimes more, at this centre. During the Irrawaddy crossing the advanced surgical centre, serving the 20th Indian Division bridge-head, comprised four teams, and at Meiktila also there were ultimately four surgical teams. This arrangement ensured that not only the high priority but a considerable number of the less serious wounds received their operative treatment within the optimum time, which would not have been possible if the most forward surgical centre was located at the CCS level. During rush periods the surgeons had to work throughout the whole night if enough surgical teams were not available. Otherwise an eight-hour shift ensuring regular rest and consequently increased output was instituted.

There was a tendency sometimes to regard the advance surgical centre located forward as its proper site and to consider that if they were located further down the L of C they were being wasted and also such centres were looked upon as the preserve of the division or even a brigade. The first conception is a dangerous one to combat, but it should be regarded as the axiom of war that operative treatment is only to be given forward of a CCS in circumstances which prevent the casualty from reaching the CCS within a few hours and without undergoing grave deterioration. The second, namely the brigade or the division looking upon the advanced surgical centre as a close preserve, was dispelled by a letter circulated by the Army Commander.

Nursing: The most serious problem of keeping serious cases in advanced positions, like the advanced surgical centre, was the problem of nursing and wherever possible nursing sisters were sent forward from the CCS to supervise post-operative nursing of cases. Towards the end each corps possessed a team of flying squad of such nurses, but their function in forward areas was always dependent on the military situation. The Japanese troops had the curious habit of appearing suddenly behind the main front and of infiltrating during the night behind the advanced positions and the decision to send forward the nursing sisters to the advanced surgical centre, located very much forward, was always a difficult one, especially during the busy periods when they were actually

needed. It must be observed, however, that the sisters themselves always volunteered to go forward in complete disregard of their personal safety and worked under the most difficult conditions just behind the front. Apart from their outstanding professional work, the fact of their mere presence was a morale-raiser to the wounded and the troops alike.

Surgery at CCS level

The Corps Medical Centre consisted of the CCS and the MFTU and its *modus operandi* has already been described. To this advanced centre most of the casualties occurring during the day were evacuated by light planes. The establishment of the Indian CCS had only one surgeon and in consequence during rush periods it required reinforcements. The scheme that was ultimately evolved during the campaign was as follows:—

As soon as a new centre was established, the surgical team from the closing CCS were moved forward so that it was at least possible to have two surgeons in each active CCS. The number of casualties admitted to the CCS was limited depending on the availability of surgeons. As a rule it was considered that 50 cases were the optimum number for a CCS with only one surgeon on its establishment.

The Corps Medical Centres were sometimes looked upon as holding units or corps hospitals at which the patients could be held for a considerable period. This may be permissible in cases of minor sickness but in surgical cases this rule was not observed. This procedure was fraught with grave consequence as it would lead to overloading the CCS when a sudden onrush of casualties is received and it denies the lightly wounded men the great benefit of delayed suture. For these reasons the corps medical centres were strictly supervised and the clearing function of the CCSs ensured. The policy followed in the Fourteenth Army was to disallow the CCS from doing any delayed suture work. Proper sterilization could not be guaranteed with the theatre and dressing facilities available at the CCS. The nursing staff was limited for the all important holding period of 10 days after which delayed primary suture could not be guaranteed. The aim was, therefore, and should also be, to evacuate all battle casualties at the earliest possible opportunity to advanced base hospital where facilities for air evacuation existed.

PROBLEMS OF EVACUATION

The administrative advantages of air evacuation over the methods used for this purpose have already been described. In this theatre a considerable and even unique experience was acquired of the practical and clinical problems of air evacuation.

Evacuation in Forward Areas: During the operations of the Fourteenth Army the use of light planes for evacuating casualties superseded all other methods. It was a life saving measure as the trauma and dirt inherent in road journeys were avoided. The time usually taken for the flight from the forward area to CCS was about 45 minutes and the light aircraft flew so low that all types of casualties could be safely carried to the Corps

Medical Centre. The clinical disadvantages in air evacuation in light planes were:—

- (1) the absence of night flying, necessitating the retention of casualties probably at the MDS level or even further forward;
- (2) that it was impossible to continue resuscitation in the plane during the journey owing to the small size of the plane. The decision to evacuate a case with a high degree of shock was therefore an anxious and difficult one.

Evacuation by transport planes to the advanced hospitals caused very great difficulty. This was primarily because these transport planes could not work precisely to a definite programme and co-ordinate air supply and air evacuation, the former being dependant on tactical considerations. Patients, therefore, had to spend considerable time, often a whole day, waiting at the airfield on a stretcher and then returning to the unit in the evening which was very trying to the wounded patient. The answer to these problems lies in the provision of ambulance aircraft solely for the use of evacuation purposes. The argument that this would entail waste of air-lift is not wholly tenable, as these aircraft can be used for carrying forward stores.

The ceiling of the flights

Medium aircraft also caused some difficulty. When the flight ceiling did not exceed 3,000 to 4,000 feet and the flying time was under five hours, the bulk of surgical cases could be safely transported after operation and in tolerable comfort provided sufficient attention was paid to splinting, posture and the usual body needs. Even to this there are exceptions, namely an early post-operative abdominal case who reacted badly to any form of movement and recent thoracic in which there is a danger of continuing or renewed intra-thoracic bleeding. These difficulties were aggravated when the low-level flying was precluded due to inclement weather conditions and the pilots had to fly at heights of 13,000 to 17,000 feet. The patients were not supplied with oxygen and at this time new clinical problems arose and recent abdominal wounds travelled in extreme discomfort and the tendency to meteorism was very pronounced. Patients recently resuscitated from severe shock were badly affected by high flying. This was particularly so in severe wounds and massive muscle injuries. These difficulties were aggravated in the case of chest wounds mainly because of the changes in intra-pleural pressure. A patient having a pneumo-thorax feels uncomfortable between 4,000 feet and 5,000 feet when the tension of the intra-pleural air begins to show a significant rise and cyanosis, acute dyspnoea and palpitation develops. These symptoms were more marked in recent cases whereas aerial journeys were tolerated by later cases better, as the lung was fixed by adhesions and there was reduced tendency to mediastinal shift. As a result, evacuation by transport planes of chest wounds was prohibited and these cases were held forward as far as possible.

Cranial wounds

These casualties travelled well by air at all heights but they

travelled better before the operation than afterwards. Provision of a plaster cap helped the patients to keep the bandages in position. Administration of a hypnotic considerably helped respiration during the journey. Unconscious patients were placed in a semi-prone position so that the tongue fell forward and prevented respiratory obstruction. In unconscious patients an intra-nasal tube was inserted before the journey. It would permit the regular administration of fluids to combat the dehydration.

Maxillo-facial cases

These cases travel best for the most part but certain conditions must be fulfilled. They should be transported in a semi-prone posture or sitting up; the latter position is better, as a semi-prone position on a stretcher is uncomfortable for a patient. The tongue is the principal source of danger and an orderly must be instructed that he should never allow a maxillo-facial patient to lie on his back during transport. These casualties whilst flying on high altitudes may suffer from severe ear-ache owing to the inability to open the pharyngeal orifice of the eustachian tube, resulting in pain in swallowing. This may, however, be alleviated by fixing the jaws together by an intra-dental wiring, but this raises serious dangers if air sickness supervenes and calls for immediate attention. If the vomited material is fluid the risk of asphyxia is not greater as the fluid can easily escape from between the closed teeth. In any case the intra-dental wiring should be quickly released, and for this reason it is important that the inter-maxillary connections should be by rubber bands rather than by wire. The administration of fluids to these patients is of great importance and this can be arranged by the use of a tea-spoon, and if there is an edentulous space, by the use of a special feeding cup with a rubber tubing attached to the spout. If feeding is not possible an intra-nasal tube might be introduced for administering nutrient fluids.

Fractures

These cases travel comfortably if there is complete immobilisation. In the case of fractures of the femur it should be ensured that the extension is taut and that there is adequate padding between the outer side of the ring incorporated in the plaster, especially at the back. The foot should be left free and should be supported at right angles by a foot piece and the end of the splint securely attached to a suspension bar. In the case of fractures of the tibia and the fibula, a plaster cast from mid-thigh to the tarsus was applied. The toes were left free but a loop of Crammer Wire was incorporated in the plaster to avoid contact with blankets. The encased limb was placed in a Thomas splint and was secured by a few turns of the plaster. As regards fore-arm and elbow fractures the most important factor in the transport of these cases was to ensure that the fingers and thumb are kept mobile. Cases of gun-shot wound of the spine with paraplegia were evacuated with an air ring under the buttocks. These cases were not put in plaster, but the orderly was instructed to change the position slightly every 20 minutes. If this is done gently there was no risk of increasing the damage to the cord as

the gun-shot wound of the spine does not usually give rise to the same mobility at the site of lesion as the ordinary fracture dislocation.

Colostomy

In these cases before emplaning the bowels should be cleared as it is unpleasant both for the patient and his fellow-travellers if there was any bowel action during the flight.

Adequate provision of blankets and hot water bottles should be ensured as in high flying as low temperatures are experienced. Wherever possible, it was ensured that if high flying was anticipated, oxygen was available.

Shock and resuscitation

During the present phase of the campaign there was hardly any opportunity for scientific investigation or observation of shock even though there was a plethora of clinical material. Experience in the treatment of these cases only served to emphasise the complexity of the mechanism involved in shock which follows severe body damage.

Organisation of resuscitation

The limitation of the number of units available made it only possible on rare occasions to attach a field transfusion unit to the advanced surgical centre. As a consequence resuscitation at the stage where it was most important had to a considerable extent, to be undertaken by officers of the field ambulance or of the mobile surgical units. The field transfusion unit usually functioned at the Corps Centre and acted as a distributing centre for the advanced centres to which the supplies of blood, plasma and crystalloids were conveyed by returning light aircraft. The great shortcoming in this procedure was the absence of the valuable help and advice of a trained resuscitation officer in the forward areas. It was difficult to send whole blood forward; as ice was not available for ice-boxes the blood actually sent forward had very limited life. During the night when most of the forward operations were carried out and the theatre was working at full blast, the surgeons had to rely on plasma or on blood donated by local volunteers. There was a striking difference in these conditions whenever it was possible to reinforce the advanced surgical centre with a Transfusion Unit when it was possible for the surgeon to work in co-operation with the resuscitation team and the results obtained were excellent. The achievement of the field ambulances and the mobile surgical units in forward surgery in the absence of a transfusion set-up only emphasises their zeal and devotion.

The diagnosis of the shock state by inexperienced doctors was difficult since dehydration, fatigue and heat exhaustion were always concurrent conditions. Blood-pressure and pulse rate were notoriously unreliable and unless there was obvious evidence of severe haemorrhage or extensive muscle wounds, it was customary to postpone energetic resuscitation measures until the effects of fluids, morphia, reasonable warmth and a short period of rest had been observed. In the case of large wounds, diagnosis was easy and if blood pressure was not lowered, it

was due to a compensatory mechanism which was negligible in the planning of treatment. It was necessary to guard against cases of latent shock but in all such suspected cases the patient was treated as if the syndrome was actually present.

There was considerable argument as to the level at which transfusion could be given and also as regards the relative amounts of blood and plasma to be administered. There was a tendency to hold many cases at the ADS for resuscitation purposes, but this tendency was ultimately curbed. A case which relapses on the subsequent journey after primary resuscitation at this level could scarcely, if at all, be restored to operability, a second time. Unnecessary transfusion was also dangerous and this factor was strongly impressed on medical officers of the field ambulances. Ultimately the policy was to transfuse such cases at the ADS as were unlikely to reach the advanced surgical centre alive. In these cases the necessary fluids work quickly and as soon as the patients condition improved, he was evacuated with transfusion continuing in the ambulance. The consensus of opinion was that the advanced surgical centre is the ideal place for resuscitation measures and whenever possible, operations could be carried out as soon as the blood pressure became normal.

Relative amounts of blood and plasma: Transfusion with blood is unquestionably life-saving but there was a tendency to exceed the normal limits. Severe haemorrhage certainly indicates the necessity for prompt transfusion with whole blood. In many cases of shock, however, the blood loss had not been excessive and in these plasma was adequate for the initial treatment, though it was necessary to give blood later in the post operative stage. The type of cases that required urgent uses of large proportions of whole blood were:—

- (1) large flesh wounds where the blood loss had been immense;
- (2) the bleeding abdomen;
- (3) wounds in which there had been excessive haemorrhage. In this category are included wounds of the larger vessels; and
- (4) gas-gangrene.

Plasma was satisfactory for cases of burns and for minor degrees of blood loss. Administered to patients with abdominal wounds in conjunction with some blood (a ratio of 2 plasma: 1 blood) rendered these cases fit for operation except those in which massive haemorrhage had occurred and was continuing. In cases of peripheral vascular collapse also, administration of plasma and blood did not render the condition fit for surgery. In case of massive injuries of the abdomen it was better to convey the patient immediately to the operating theatre and give whole blood rapidly whilst preparations were made for laprotomy.

Complications of transfusion: (1) *Rigors:* When dried plasma was used, rigors occurred frequently and though disturbing, had no apparent ill effect. It was the impression that they occurred especially in those who were greatly dehydrated, but it is difficult to substantiate this statement.

(2) *Anuria:* Recognised cases of anuria were infrequent and in cases where anuria did occur, the evidence did not justify the conclusion

that transfusion was the precipitating cause. It was pointed out that in case of these patients, maintenance of intake and output charts would greatly facilitate early detection of any symptoms of anuria.

Dehydration: It is unnecessary to overemphasise the importance of dehydration which is present to a greater or lesser degree in every battle casualty. During the hot weather this condition becomes particularly pronounced and during the closing stages of the campaign not only were the troops short of fluid when they were wounded but lay out exposed to the sun for some time before being picked up. During the evacuation to the RAP and later to the ADS, the casualty was again exposed to considerable temperature in the open and in the ambulances. There was a further delay at the advanced surgical centre or the CCS where also the temperature in the tents and the post-operative wards were usually high. The importance of administering fluids from the earliest possible moment after wounding, therefore, cannot be over-emphasised. The fluid of choice was usually salinified water. This is perhaps the most important single resuscitation measure that was possible at the ADS and if neglected, the casualty usually reached the advanced surgical centre or the CCS in a dehydrated state.

The resuscitation theatre and post-operative tents were usually located in the shadiest spots of the site and the staff was well-instructed in the necessity of administration of ample fluids. It was not sufficiently appreciated, however, that the patient who had lost salt as well as fluid is generally not thirsty and frequently vomits water when given. It was emphasised that the patient should be forced to drink and he was usually amenable to drinking salt water.

When dehydration reached a dangerous stage, replacement of fluids and salt by intravenous drip was urgently instituted, especially in the cases of severe shock. It is usually advisable to give a pint or two of glucose saline before plasma infusion is started in case whole blood transfusion is not imperative to save life. A useful practice was to give glucose saline to all cases in the pre-operative and operative stages. This was regarded particularly important as incipient heat effects were not uncommon.

Climate: It was observed that surgical practice and its results in Burma were greatly affected by climate and special precautions were necessary to minimise or circumvent its effects. During the whole period of campaign the temperature was fairly high with a pronounced degree of humidity resulting in dehydration and salt depletion. The high incidence of skin infections during the hot weather also led to an increased risk of infection in wounds and contributed to delayed healing.

Increased theatre risks: Usually in peace time operations are restricted to the early morning. In cities the use of air-conditioning keeps the temperature in the theatre low. These procedures were obviously impracticable in battle surgery, and special precautions were therefore used to combat dehydration as mentioned above.

Exhaustion of surgical personnel: The theatre staff are liable to fatigue when working for hours on end, as was required in the field. This led

to a deterioration of judgement and technique marking almost the limit of endurance. A surgeon usually did not make any allowance for hours of preparation in cleaning up, which usually accompanied each operation session. The best plan to combat this fatigue in surgical personnel was to divide them into teams and work on a shift basis which was introduced in the later stages of the campaign.

Nutrition of the wounded: Maintenance of adequate state of nutrition in the post-operative period was one of the principal problems during this campaign. The diet of the ordinary Indian soldier was vastly improved during the war, but owing to the particular dietetic habits there was a precarious state of balance in respect of animal proteins in so far as the Indian soldiers were concerned. These soldiers were not in a fit state to withstand a pronounced protein breakdown after wounding, and if his injuries were serious or if the protein loss was very great, there was a possibility that the patient would rapidly pass into a state of profound hypoproteinaemia. No elaborate biochemical tests were needed to detect this condition. The patient obviously lost flesh, the eyes were sunken, the abdominal and cervical skin was slack and even the plaster casts became loose. Hypoproteinaemia in a severe form is very serious as it predisposes the onset of infection and delays in healing.

During the campaign an attempt was made to stress this frequently neglected aspect of surgical aftercare. There was a vital need for the help of dietitians in the forward areas, especially so as most of the surgeons were not greatly interested in diet. In post operative cases it was necessary to consider food as a therapeutic measure just as important as any other surgical measure undertaken. It was felt that in the forward area an expert dietetic officer would be of considerable help. During the campaign the corps catering advisers helped in cases, but these had only a limited knowledge of the scientific basis of therapeutic dietetics.

Management of head-wounds in the forward areas

It was usually possible to get the casualties with head wounds back to the neuro-surgeon within the recognised period of 72 hours. The forward surgeons in the army were all thoroughly alive to the importance of this factor and no surgical interference of such casualties was undertaken except at the advanced base hospitals. The head injuries arriving at a general surgical unit were passed on as expeditiously as possible. At this stage only the essential precautions were taken. If there is unavoidable delay in the forward area, limited excision of the wound was undertaken and superficial in-driven bone or debris was removed without any probing.

Maxillo-facial wounds

A general surgeon with the assistance of a good dentist could undertake all that is required in the primary treatment in the case of maxillo-facial wounds in the forward area. The policy of the army was, however, to evacuate these cases as soon as a safe and reasonable journey

could be ensured. The forward treatment of the flesh wound usually consisted of cleansing and fixing the loose flaps by minimum number of stitches, approximation of the skin to mucosa at the margins and the application of a loose paraffin gauze dressing. Where bone injury was present the jaws were usually fixed by an intra-dental wiring and drainage at the site of fracture was ensured by a stab drain. Delay in evacuating maxillo-facial cases to the advanced base hospital involved special problems of feeding the patient and ensuring his fluid requirements. The diet had to be largely fluid and since the patient had to be fed, care of such cases was time-consuming. It is interesting to note that no respiratory obstruction was seen with severe face or jaw wounds. Tracheotomy was virtually never necessary. The patient was usually evacuated in the prone or semi-prone position so that the time-honoured method of stitching through the tongue was hardly necessary.

PREVALENT DISEASES

As will be seen from the figures given earlier, the average sickness of casualties declined considerably from November 1944 to May 1945. Some decline in sickness could have been expected in the winter months but the rates were lower than any previously recorded, and it was noticeable that the rates of malaria and dysentery continued to fall in the spring when a rise might have been expected. To some extent this might be due to the fact that the main body of troops in the Fourteenth Army passed from a notoriously unhealthy region of the Indo-Burma frontier into the healthier area of the Central Burma plain and finally into the humid but relatively healthy South Burma area. The seasonal and topographical features certainly contributed to the low sickness rate, but there can be no doubt that hygiene and medical measures also were concerned in this fall in the sickness rate.

Malaria: The preventive measures adopted in this theatre to combat malaria will be discussed later. From the physicians' point of view the most satisfactory feature of suppressive mepacrine treatment during this period was that pernicious forms of malaria almost disappeared and there was only one case of black-water fever during the whole period.

Dysentery and diarrhoea: Though seasonal and topographical influence might have played a part, there can be no doubt that the provision of large quantities of sulphaguanidine for use by regimental medical officers and forward medical units greatly contributed to the appreciable decline in the incidence of these diseases. Not only were a great number of admissions to hospitals avoided but owing to the early sterilisation of the stools by the administration of sulphaguanidine, a low carrier rate of dysentery organisms was established and might have contributed to the low incidence of the disease itself subsequently.

Typhus fever: Scrub typhus was apparently not recognised as such in Burma before the war, nor in the early stages of the war. The Fourteenth Army physicians became familiar with the clinical picture of this disease and its diagnosis by early 1944. In early stages this disease presented some difficulty in diagnosing as it was confused with dengue. Practically all cases in which Weil-Felix reaction was done, a high OXK

titre was shown. In the last few weeks a few scattered cases of agglutination with OX 2 and/or OX 19 were also seen. During this period 748 cases of scrub typhus were notified with a total rate of about 7.2 per cent the incidence declining from 96 in one week from September 1944 to one or two cases a week by the end of the campaign. The seasonal and topographical influences were probably mainly responsible, but this does not mean that hygiene measures were ineffective. If anything was learnt in the treatment of this disease, it was the supreme importance of good nursing in all its aspects and the avoidance of the movement after the first few days until convalescence was established. Medical specialists were gradually persuaded to abandon the use of digitalis in the presence of circulatory symptoms which were in fact due to peripheral circulatory failure.

Small-pox: This disease appeared in the last month or two of the campaign, when 198 cases were notified with 13 deaths. Many were of a very mild type but confluent haemorrhagic cases were sometimes seen. These were usually treated with penicillin and sulphathiazole and the result seemed satisfactory though no control observations could be made under the conditions which prevailed. Several desperately ill and apparently moribund cases eventually recovered.

Cholera: Small outbreaks of this disease also occurred towards the end of the campaign, 69 cases being notified with ten deaths. These were treated with full doses of sulphaguanidine and very large saline infusions (15 or more pints in 24 hours). A good number of patients had been inoculated during the previous four months but it did not seem possible to estimate the value of the inoculation. However, the general impression was that these cases were milder than the conditions described in text-books. The mild nature of the attack was probably due to the immunity produced by inoculation.

Infective Hepatitis: This was an endemic disease, the incidence of which increased as the campaign progressed. The reasons for this remain obscure.

Nutritional disorders: Almost no cases of marasmus nor of the syndrome were seen in the later stages of the campaign. Here again the season, topography, a lower rate of infective diarrhoea and better rations, all contributed to the decline in the incidence. All stages of starvation and some cases of beri-beri were seen in the Japanese prisoners.

Evacuation and disposal of medical cases

The organisation of the corps medical centre and its function have been already described in detail. The evacuation of cases by Dakota aircraft to advanced base hospitals necessitated flying over mountains, ranging eight to nine thousand feet in height in bad weather. Planes flew thirteen to fifteen thousand feet high and occasionally even at 17,000 feet without oxygen. At these altitudes normal persons experienced mild discomfort. It was found very necessary to avoid evacuation of cases of serious respiratory diseases which had significant diminution of respiratory reserve. Anaemia cases were not flown out until their

hemoglobin was at least 50 per cent. It was also found that cases of scrub typhus travelled badly.

The number of medical cases admitted to CCSs and IMFTUs varied greatly. At peak periods one IMFTU held 853 medical cases and a CCS 655 medical cases. This was exceptional but an average of some 200 medical cases with a peak of 400 to 500 was usual in IMFTU. The proportion of medical cases returned to duty from the corps medical centres varied with operations and other circumstances but was generally in the neighbourhood of 75 per cent. There were remarkably few deaths from medical causes. Thus in 9,734 medical admissions to eight IMFTUs fatality rate was .35 per cent. In the later part of the campaign the principal causes of death were small-pox, cerebral malaria, cholera and snake bite but the actual number in each case was low.

Drugs: The supply of drugs was generally satisfactory. A definite shortage of certain antihelmintics and a relative shortage of the newer sulphonamide group of drugs (Sulphathiazole and Sulphamethazine) were the only notable deficiencies.

Organisation of Air Evacuation

The organisation of air evacuation has been referred to earlier, but the following details would be of interest. As was evident from the description, evacuation of casualties was carried out by air, entirely so in the case of evacuation to advanced hospitals from Burma and very largely so in the evacuation from forward to rear installations in the army area. Two main types of aircraft employed for this purpose were: (1) light aircraft employed within the army area, and (2) medium range aircraft employed in the evacuation from forward corps or army medical centres to advanced base hospital in Eastern Bengal, and to a minor degree in transferring casualties from forward to rear centres in the army area. Air evacuation of casualties was an essential feature of the plan of the campaign of the Fourteenth Army. In its absence an enormous increase in hospital cover in the area of active operations would have been necessary and the long chain of transit hospitals extending over many hundreds of miles of road would have been a natural consequence. The advance was so rapid that after the fall of Meiktila it would have been practically impossible to establish any L of C through which casualties could be evacuated as large pockets of Japanese forces were being bypassed in the advance.

Employment of light aircraft

This was a complete and outstanding success and ensured a rapid and smooth evacuation from the divisional medical units. A concomitant advantage was that the senior medical officers, consultants and specialists could, if needed, be carried rapidly to places where their services were required. This aircraft also brought to the forward areas perishable medical stores like blood transfusion requisites, vaccines, sera, etc.

Organisation and employment of light aircraft: The following were the types of light aircraft used:—

L-5,

L-1, and

C-64 (Norsman) (a few Foxmoths were also available).

No helicopter was used for the evacuation. Two squadrons of USAAF Air Commandos with thirty-one L-5's and four or five C-64's each were available throughout and were allotted on the basis of one squadron per corps—a cover which was just adequate. Additional aircraft were available during part of the time, notably during the siege of Meiktila. In addition a flight of RAF L-5's were employed in the evacuation of RAF casualties and their services were lent to the army on many occasions. These aircraft operated from air-strips about 500 yards long and 30 yards wide.

Employment

The aircraft were employed between field ambulance and corps medical centres and occasionally in shuttling the casualties between army and corps medical centres. The air-strips in the forward areas were usually constructed by the field ambulances and those of the corps medical centres by airfield engineer corps. Evacuation was limited to daylight hours, usually from 0600 hours to about 1630 hours daily. A squadron commander usually worked in close liaison with the corps medical authorities and allotted aircraft to flights as required. These aircraft were at the sole disposal of the medical services. The last flight from any forward MDS area usually brought in an estimate of the number of sorties that would be required for the following day, thus limiting signal demands for aircraft with its inevitable delays to a minimum.

Evacuation by light aircraft was uniformly excellent, and the types of aircraft were well suited to the purpose. A higher proportion of C-64's would have been welcome as the modification of all L-5's to take lying casualties was not quite satisfactory. L-1 aircraft did not prove a success. The only drawback was that where the allotment of aircraft was adequate for the corps no cover was available for army troops.

Employment of medium range aircraft

Dakotas were employed for evacuation of casualties from corps medical area to advanced base hospitals. Catalina amphibians and Sunderlands were used to a very limited extent on the lakes and rivers of lower and central Burma, but were not adopted as a means of evacuation. Twenty-four aircraft were constantly employed for the purpose of the fly-in of reinforcements and air evacuation of casualties. Additional aircraft varying in number were used for transport of stores. These medium range aircraft usually carried about 24 lying and 8 sitting cases or 34 sitting cases. They operated from air-strips of 1,000 to 1,500 yards long and 100 yards wide.

The system of demanding aircraft required for evacuation purposes

was as follows: An estimate by airfields of the number of sorties per day required was placed through proper channels by the formation requiring the services of these planes for evacuation of casualties. This estimate covered a 14 days' working period and was submitted seven days before the commencement of the 14-day period. The estimates were made by the medical authorities and the formation concerned and were sent as a consolidated demand from all formations. From this estimate a regular plan for the evacuation of casualties during this period was worked out. As a supplement to these fortnightly estimates, there was an SOS service whereby the necessary additional aircraft could be made available to any particular airfield or airfields at 48 hours notice. As the number of aircraft available was not always equal to the demands made, a system was adopted whereby the formations, airfields and medical units concerned were notified by signal of the number of aircraft available and their estimated time of arrival. It will be seen that these elaborate procedures to a great extent limited the scope of air evacuation but on the whole it worked satisfactorily. The only answer to a complete cover would be the provision of ambulance aircraft placed solely under the orders of the medical authorities concerned.

During the initial period of some three to four weeks, evacuation was made to advanced base hospitals in Imphal. A large proportion of casualties were transferred later from Imphal to Comilla. As the advance southwards progressed it became more economical in aircraft and road and rail transportation from Imphal to Comilla, to evacuate direct to base hospitals in the Comilla, Agartala, Mynamatti areas. In these instances the Comilla based aircraft were employed for evacuation of casualties. This route had the advantage that Comilla based aircraft were also able to lift reinforcements from the main reinforcement camps located in that area. Evacuation to advanced base hospital in Comilla continued up to the last four weeks of the campaign. An alternative route was then employed as the forward medical centres were too far forward for aircraft to operate economically. The range of the Comilla based aircraft and the approaching monsoon prohibited the flying of casualties over high mountains. However, direct evacuation to Comilla continued from rear medical units of the Fourteenth Army. The alternative route adopted was via Akyab and to a lesser extent via Ramree. Casualties were staged overnight or longer if their condition demanded, in advanced hospitals in these places and were transferred by air to Comilla on a second journey. It was originally intended to move the base hospitals from Comilla to Akyab and later to Ramree in co-ordination with the advance of the Fourteenth Army. The project had, however, to be abandoned owing to the difficulty of moving and establishing these hospitals in time.

It will be remembered that no medium aircraft was allotted solely for the purpose of casualty evacuation. The aircraft were used on the outward run for the carriage of reinforcements or supplies. An organisation of separate medical air ambulance service was proposed several times but was turned down on the excuse that the number of aircraft available were severely limited and rigid economy in the utilisation of those available should be ensured. The organisation of evacuation by

medium aircraft were satisfactory within limits but certain difficulties constantly cropped up. The last minute cancellation or alteration in the route of outgoing aircraft due to weather conditions at the base, en route or at the forward area inevitably led to difficulties in the evacuation schedule. This was, however, only a feature of the monsoon and did not cause much difficulty at other times. Faulty briefing of the pilots resulted in the non-arrival or late arrival of aircraft or in the arrival of excessive number of aircraft at the same place and time. This led to avoidable delay in loading the patients or sometimes in hitch in loading schedule and inconvenience to the evacuating medical unit. Sometimes casualties had to be kept waiting for long periods in hot and dusty air-strips and occasionally they had to return to the evacuating medical unit to spend the night.

Delay in signals made arrangements at the forward area rather difficult. This was especially so if the signals were in cipher as these had to be deciphered through the nearest formation resulting in considerable delay. As a result of all these difficulties unit commanders sometimes refused to send casualties to the airfield until a firm confirmation of the expected time of arrival of the aircraft was received. This refusal can be considered in the best interest of the casualties but it caused delay in loading and turn-round of aircraft when these arrived without notice. Precious sorties were thus lost. No permanent medical or nursing staff were available in the medium aircraft. When circumstances demanded medical or nursing personnel this had to be provided by the evacuating medical unit.

It is evident from the foregoing, that the time had come for the establishment of a separate air ambulance service under the direct control of the medical authorities and used solely for medical purposes. This would mean allocation of a number of aircraft solely for the purpose of casualty evacuation. The argument against such a service is likely to be that it would be uneconomical to employ aircraft for evacuation of casualties exclusively. But if the air ambulance service is widened to meet other medical purposes like fly-in of medical units from base to forward areas and movement within forward areas and transport of medical stores, it is clear that a full and economic use of the aircraft will be ensured. It is also important to have medical air ambulance service organised in view of the fact that supply aircrafts cannot be considered to be protected under the terms of the Geneva convention.

Organisation of Airfields

Wherever possible, light aircraft strip and the heavy aircraft strip should be constructed as parts of the same airfield and the unloading and loading areas of these two strips should be as near as possible. Such an arrangement ensures the minimum use of road move of the casualties and minimum requirements of ambulance cars. The employment of a single combined reception and evacuation medical unit under one control was desirable. Good roads should be constructed from the air-strip to the medical unit.

During this phase of the campaign in Burma, corps field ambulance

(in whole or in part), combined Indian Staging Section and RAF casualty air evacuation units were used at the airfields. The last named unit designed specifically for the purpose was well-equipped and mobile but possessed only British personnel. As the bulk of casualties were Indian in this theatre, it was necessary to attach Indian personnel from a staging section to this unit. This unit had a minimum capacity of 50 beds, capable of expansion to 200. The medical unit of the airfield should also be capable of carrying out of unloading of light aircraft, the sorting of casualty, attention to those awaiting evacuation and the loading of aircraft, all at the same time. It was considered necessary to have an adequate number of non-medical officers and NCOs and an efficient inter-communication system between the control staff and evacuating unit and between that unit and the medical centre. Adequate water supply, cooking facilities and latrine accommodation were also provided.

Prevention of Malaria in the Field

The heavy manpower wastage during the previous campaigns in Burma had focussed the attention of all concerned on the paramount importance of malaria control. The personnel and means available were, therefore, considerably augmented before the commencement of this campaign. New methods were introduced and all precautions were taken to ensure that the incidence of malaria was kept low. This was difficult to achieve, specially in view of the severe test imposed by offensive operations during the monsoon. But even in such adverse circumstances a fair measure of success was achieved.

Personal protection

No changes in the standard regulations were made and long trousers were in universal use throughout the day. The battle dress blouse continued to give defective service at night, partly on account of being too short, with a gap left above trousers, and partly because of its texture. A change-over from the usual anti-mosquito cream to dimethyl-phthalate and other liquid repellants met with general approval and was widely used. Mosquito net protection was by no means universal even at army headquarters, where it was still possible to come across individuals or small groups sleeping without mosquito nets. This definitely showed up the difference in the attitude of training of various units. It was accepted that patrols cannot use the usual mosquito net when out on duty. But it was certainly possible for troops in the army headquarters area to use the mosquito nets whilst sleeping. In perimeter areas malarial discipline reflected the attitude of the officers with regard to casualties by malaria.

Anti-malaria units continued to be the main agency for reducing malaria infection. One anti-malaria unit was attached to each division and corps headquarters and one to army headquarters. They were also located at the main bases and along the L of C. The aim of all anti-malaria units had been to reduce as rapidly and extensively as possible the number of mosquitoes carrying malaria which might attack the troops. Before the advent of DDT, it was doubtful whether operational

troops in forward areas were ever materially protected by the work of anti-malaria units. These troops had relied solely on personal prophylaxis. After the arrival of DDT, active operations took place, mainly in less heavily infected areas, where protection afforded to troops was harder to assess. The advent of DDT made some drastic changes in anti-malaria measures. Paris Green was not used for spraying in the army areas during 1945. DDT also reduced the demands for extensive drainage acknowledged to be an engineering measure for which much trained labour had to be used. Work of the divisional anti-malaria units suffered from their not being self-contained with regard to transport. The aim should be to provide ample transport resources to the unit so that their work is not in any way delayed. Only in one instance when a large part of one anti-malaria unit moved with the 5th Indian Division in their rapid advance to Rangoon was it possible to supply sufficient transport for the whole unit without calling on a severely limited divisional transport pool.

DDT

This chemical which was to completely reorientate the work of malaria prevention began to be freely available to the Fourteenth Army during the closing months of 1944. Since this provided a means of fighting not only mosquitoes but also other insects and pests, a compromise had to be reached quickly about the work of the anti-malaria units and field hygiene sections as both of them were users of DDT and spraying equipment. It appeared that ultimately a medical entomological control unit will become responsible for all the insecticidal work with DDT and other similar agents. The main need was to avoid duplication of demands for equipment and supplies by both field hygiene sections and anti-malaria units. If the anti-malaria units undertook the whole work then it was essential that the officers incharge of anti-malaria units should be trained in the broad aspects of medical entomology.

There was also a drive afoot to get DDT more extensively used by combatant troops and during the last phases of this campaign more than half of the DDT solution expended by the divisions was used by the units themselves. In the early stages there was a tendency to use DDT as a substitute for malariol and similar solutions, and the old types of sprayers were used. Gradually, however, the full significance of DDT came to be studied. It was found to be a substitute, which was apparently capable of being used against all manner of insects, not only in a variety of solutions but as a powder or as an emulsion. Its action was also found to be spread out. It became clear that for the use of this solution a new apparatus should be designed to fulfil new functions. The hand spray and petrol driven sprayers were ultimately used for spraying DDT.

Air Spray

The publicity given in the early days to the possibility of spraying DDT solution over wide areas created a false sense of security, as it was

assumed that such areas could be devoid of any infection. This belief also implied that units and individuals operating in all sprayed areas had no further duties of malaria precaution. This belief lasted even after the accurate experiment in the Kabaw Valley and elsewhere had shown the true value and marked limitations of DDT spray from air. It was difficult to spray large tracts of land owing to limited availability of suitable aircraft. The shortage also meant that areas in which troops had already moved could be sprayed only after considerable delay. This happened again and again during this campaign.

Various problems were met with in the effective use of DDT. The problem of supply of this chemical to the forward units was dependant on the availability of air supply. This was more a question of logistics than a chemical or biological problem. The type of liquid used for dissolving DDT also caused some difficulty. Kerosene oil, grade three, was originally recommended to be used for dissolving DDT. This was neither a medical nor a S & T supply and stocks of kerosene oil had therefore to be provided purely for the use of making DDT solutions. It was later found that high speed diesel oil which was an item of regular supply was a satisfactory substitute for kerosene oil and was extensively used.

Suppressive Mepacrine Treatment in the Field

This treatment was given at first only to a proportion of troops in the Fourteenth Army. But by March 1945, all troops east of the river Brahmaputra were put on suppressive mepacrine treatment. Owing to the difficulty of medical units supplying the drug it was ultimately decided that the supply branch should undertake the supply of these tablets.

The benefits of daily mepacrine consumption by troops in the field was remarkable. The comparison between the malaria casualties suffered up to November 1944, showed that in the L of C area among the troops who were not on suppressive mepacrine treatment, the incidence of malaria rose and fell with seasonal variations. On the other hand in the Arakan, troops of the XV Corps on suppressive mepacrine treatment showed only a low incidence of the disease which did not show seasonal variations. In October 1944, a drive for ensuring mepacrine consumption was instituted in the 26th Indian Division. The results were very satisfactory. The incidence came down to 50 per week from about 250-400 a week without any diminution in the intensity of transmission. The malaria casualty rate in the Fourteenth Army for the first five months of 1945, was about 1/5th of that for the same period in 1944.

Causes of failure of Suppressive Mepacrine Treatment

Outbreaks of malaria occurred among units and formations which were under suppressive mepacrine treatment. On several occasions these outbreaks were studied and the cause traced to the failure of the men to consume their normal daily ration of mepacrine. No evidence which stood the test of analysis was ever brought to suggest that outbreak of malaria had occurred or could occur in spite of regular daily consumption of mepacrine. The cause therefore was that the troops did not

consume their mepacrine regularly. The chief reason for this default was the indifference among senior and junior commanders to the necessity for ensuring regular mepacrine consumption. Troops themselves had some misgiving, fed by propaganda, that the toxic effect of this drug taken over a long period might lead to some permanent incapacity. There was also a belief that after the suppressive mepacrine treatment was discontinued the malaria attack which might ensue would be of a very severe nature. These ideas had to be combated and the troops informed of the true state of affairs.

The Tactics of Malaria Warfare

The successful use of mepacrine as a weapon of war depends on having accurate tactical information about malaria and the opposing forces. Stereoscopic air photographs had revealed that a valuable amount of information can be obtained from such photographs about the state of mosquito breeding places in areas not yet occupied. Such photographs were used in 1945, to determine the state of perennial streams in the foot-hills of the Shan States and the Pegu Yomas areas through which Japanese were retreating and which before the rains were the main breeding places of malarial mosquitoes in this region. In densely forested country this technique was able to reveal features of malarial importance which may not be accessible to any ground reconnaissance. By skilful information collected it was possible to embarrass the Japanese in a number of ways suitable for the Allied purposes. The superiority over the Japanese in this technique and in the prevention of malaria casualties were accepted in the Fourteenth Army as a legitimate weapon of war. But this weapon was like a two-edged sword and could only be exercised by those whose malaria training and discipline were proof against being infected themselves.

A P P E N D I C E S

APPENDIX I

List of Existing Hospitals and Units, January 1942

Field Ambulances

- 1 Bur Fd Amb
- 2 Bur Fd Amb
- 57 Ind Fd Amb
- 37 Ind Fd Amb
- 39 Ind Fd Amb

Field Hygiene Sections

- 1 Bur Fd Hyg Sec
- 2 Bur Fd Hyg Sec
- B Dett (HQ and 1 Sub Sec) Fd Hyg Sec
- One Sub Sec Fd Hyg Sec
- 22 Ind Fd Hyg Sec

Motor Ambulance Sections

- 22 MAS
- Dett 1 Bur MAS

Staging Sections

- 1 Bur SS
- 2 Bur SS

Casualty Clearing Sections

- 1 Bur CCS
- 2 Bur CCS
- 4 Ind CCS

Ambulance Trains

- 1 Bur Amb Train
- 2 Bur Amb Train

Ambulance Transport

Heinrich Jessen

Depot Medical Stores

MSD Rangoon		
Branch MSD Gyogon Rangoon Area	}	Reserves only
Branch MSD Mandalay Area		
13 Depot MS		

General Hospitals

1 Bur GH HQ and 4 sections	Toungoo
60 IGH HQ and 2 sections	Mandalay
41 IGH HQ and 10 sections	Maymyo
"G" and "Q" Secs IGH	Mandalay

Peace Hospitals

BMH	Maymyo
Bur MH	Maymyo
Bur MH with Br Wing	Mandalay
Bur MH	Meiktila
Bur MH with Br Wing	Taunggyi
BMH with Bur Wing	Mingaladon
Bur MH with Br Wing	Maoulmein now reforming at Pegu
Garrison Hospital	Thayetmyo
RAF Hospital	Lashio
RAF Hospital	Namsang

Laboratories

District Lab	Maymyo
Bde Lab	Mingaladon
Small Lab	Taunggyi
Small Lab	Toungoo

X-Ray Unit

Maymyo

UNITS ALREADY SHOWN AS COMING FROM INDIA

Medical Units

	<i>Beds</i>
59 IGH	1,000
39 IGH	500
38 IGH	1,000
Br GH	500
CCS	200
2 BSS	25
16 ISS	25
31 ISS	25
Two ISSs	50
Br Con Depot	500
Ind Con Depot	500
Two EA Fd Ambs	300
Two Fd Hyg Secs	
Six Fd Amb (Ind)	
Two X-Ray Units	
Two Fd Labs	
Four Anti-Malaria Units	
Two Mobile Surgical Units	
Depot Med Stores	

Other Units from India

20	} MAS arrived less vehicles of 20 and 21
21	
22	

Expected from the UK

One CCS

One Mobile Bact Lab

200 beds

TABLE OF BEDS—JANUARY, 1942

Table of Beds		Actual beds		
		Br	Ind/Bur	Total
Rangoon Area	BMH with Burma Wing			
	Mingaladon ..	110	90	200
	59 IGH Burma with British			
	Wing from Moulmein ..	41	140	181
Toungoo Area	1 Burma GH HQ and 4 Secs			
	Toungoo ..	..	400	400
Taunggyi Area	Burma MH with British Wing	110	390	500
Meiktila Area	Burma MH ..	4	102	106
Mandalay Area	G Sec IGH ..	..	100	100
	Q Sec IGH ..	..	100	100
	60 IGH (HQ 2 Secs) ..	..	200	200
	Burma with British Wing ..	15	325	340
Maymyo Area	BMH ..	57	..	57
	41 IGH (HQ 10 Secs) ..	..	1,000	1,000
Lashio	RAF ..	48	..	48
Namsang	RAF ..	42	..	42
Thayetmyo	Garrison Coy ..	..	22	22
17 Division	1 CCS Bur ..	..	100	100
1 Bur Div	2 CCS Bur ..	..	100	100
	4 CCS Bur ..	..	200	200
	1 Bur Staging Sec ..	..	25	25
	2 Bur Staging Sec ..	..	25	25
RAF Sections	7 SS Q's (8 Sick beds each) ..	56	..	56
	Total ..	483	3,319	3,802

APPENDIX II

Army in Burma—Order of Battle—1 April 1942

1 *Burma Corps*

- 7th Armoured Brigade
- 13 Lt Fd Ambulance
- 1 Burma Fd Ambulance
- 1 Burma Fd Hyg Sec
- 7 Ind Anti-Malaria Unit
- 2 Burma Depot Med Stores

S and T

- 8 Motor Amb Section RIASC
- 1 Fd Amb Mule Troops RIASC

1st *Burma Division*—1st and 2nd Burma Brigades; 13th Indian Infantry Brigade

- 2 Burma Fd Amb
- 57 Ind Fd Amb
- 2 Burma Fd Hyg Sec

17th *Indian Division*—16th, 48th and 63rd Indian Infantry Brigade

- 23, 37, 50 Ind Fd Amb
- 22 Fd Hyg Sec

Army Troops

- | | | |
|----------------------------|---|---|
| 1 Burma CCS | } | On loan to Chinese
Expeditionary Force |
| 4 Burma GH | | |
| 3 Fd Lab | | |
| 2 Burma Staging Section | | |
| One Sec 41 IGH | | |
| Depot Ind Hospital Corps | | |
| Depot Burma Hospital Corps | | |
| HQ Detachment RAMC | | |

L of C Area Troops

- 4 MAS, RIASC
- 3 Fd Amb Troops RIASC personnel only
- 1, 2, 3, 5, 6, 7 Burma General Hospitals
- 41, 59 and 60 IGHs (less 1 Sec 41 IGH)
- 1, 2 and 3 Fd Lab (Burma)
- 2 Burma CCS
- 4 Ind CCS
- 1 and 2 Ambulance Trains
- Hospital Ships
 - Mysore* staffed by 8 CCS
 - Kalaw* staffed by 8 CCS
 - Fano* staffed by 31 ISS
 - Ebro* staffed by No 3 Amb Train
 - Lady* Innes

- 39 Ind Fd Amb
- 3 Ind Fd Hyg Sec
- 1 Burma Staging Section
- 2 British Staging Section
- 16 Ind Staging Section
 - British Convalescent Depots (1, 2, 3, 4, 5, 6, 8, 16, 20)
- 10 Ind Mob X-Ray Unit
- 2 Ind ENT Surg Unit
 - Burma Base Depot Medical Stores
- 13 Ind Depot Medical Stores
 - Burma Dist Lab
 - Burma Dental Centre.

Casualties during First Campaign

Reported killed in action	63
Died of wound and diseases	70
Wounded	163
Originally stated as missing	115

Total .. 411

[illegible]

APPENDIX IV

Disposition of Medical Units during the retreat to India

- | | | |
|------------------|----|---|
| 1. Shwebo | .. | 1 Burma General Hospital—later used as an auxiliary unit at Kalewa |
| 2. Ye-U | .. | 2 Burma General Hospital (ex Monywa) |
| 3. Kaduma | .. | 1 Burma CCS (from Meiktila then Shwebo) later to Inbaung |
| 4. Pyingaing | .. | 2 British Staging Section |
| 5. 22 mile stage | .. | 8 Ind CCS for a short time only |
| 6. Shwegyin | .. | 4 Ind CCS later replaced by extemporised AHQ Ambulance party |
| 7. Kalewa | .. | 2 Burma CCS and Friends Ambulance Unit which for 48 hours ran a very fine show and then went to Khampat and thence out to India - |
- After a short time these units were relieved by No 1 Burma Fd Amb which ran a very good show for six days until it in turn was relieved by 23 Fd Amb
- | | | |
|---------------------------------|----|---|
| 8. Inbaung | .. | 1 Burma CCS which functioned here for six days and did an enormous amount of work. When relieved by 37 Fd Amb the unit moved to Imphal and again opened there |
| 9. Yazagyo | .. | 2 Burma General Hospital, until relieved by 23 Fd Amb |
| 10. Khampat | .. | 4 Ind CCS until relieved by 37 Fd Amb |
| 11. Whitok | .. | 8 Ind CCS until relieved by 23 Fd Amb |
| 12. Tamu | .. | 2 Burma CCS which functioned here for 10 days in an evacuation camp prepared by the BOC for their oil-fields personnel and treated over 2,300 patients |
| 13. Lokchao | .. | 16 ISS and 1 Burma Fd Amb until relieved by 23 Fd Amb |
| 14. "The Saddle"
above Palel | .. | Special Staging Section
Captains Luck and Hart, RAMC and a collection of personnel from Hospital River Steamers. Until relieved by 37 Fd Amb |
| 15. Palel | .. | 40 Ind Staging Section from India (and a CMH of 50 beds which refused to admit any case from the Burma Army) |
| 16. Imphal | .. | A CMH from India (50 beds) reinforced by first 1 Burma CCS, then 8 Ind CCS |

APPENDIX V

Casualty Evacuation—Burma Campaigns

[*Copy of an extract from History of Casualty Evacuation—Burma Campaigns by Lt. Col. R. Wigglesworth 1942-45*]

PHASE I—THE RETREAT FROM BURMA—1942

The Defence of the Salween

The Japanese forces invaded Southern Burma in the early weeks of 1942. The invasion followed their occupation of Indo-China and Siam, and their rapid conquest of Malaya. The 17th Indian Division formed a defence line on the Salween river to stem their advance. In the severe fighting during this defensive stand, the evacuation of casualties was by motor ambulance convoy and ambulance train. Ambulance trains evacuated casualties from medical units as far forward as the Main Dressing Stations of the Field Ambulance. Such evacuations were carried out at Thaton and Martaban, and there was great danger of trains being cut off by bombed bridges.

The Evacuation of Southern Burma

During February 1942, six hundred sick and wounded were evacuated from Rangoon by hospital ship. As the intensity of the Japanese attack developed, hospitals were moved northwards and sited on the prepared lines of withdrawal. The axes of withdrawal became the line of Irrawaddy valley and the north-south rail and road communications connecting Pegu-Toungoo and Mandalay. Casualties were evacuated from the fighting east and south of Pegu by ambulance train and motor ambulance convoy to hospitals and medical units sited along these axes. Five river steamers operated on the Irrawaddy from Rangoon northwards to Prome and later to Mandalay. The smaller steamers were staffed by staging sections and the two larger ones became floating casualty clearing stations. For instance, No 8 Indian Casualty Clearing Station was established on the Irrawaddy Flotilla Steamer *Mysore*.

When the Japanese breakthrough on the Salween front began, two ambulance trains left the forward area fully loaded, whilst a third, acting on the orders of a civilian official, proceeded without casualties. Organised casualty evacuation became almost impossible and without communications such events were almost inevitable. Messages frequently took two to five days to reach Army Headquarters. Formations in retreat frequently had to carry their sick and wounded with them.

Motor ambulance cars were frequently machinegunned by the Japanese whilst evacuating from the Salween front, whereas, in contrast to this, No 3 Ambulance Train, clearly marked with the Red Cross Sign, was frequently passed and left unmolested by low flying Japanese aircraft.

The difficulties encountered by ambulance trains were great and their work extremely valuable. For instance, No 3 Ambulance Train

evacuated over 1,000 casualties to Prome from the south of Burma. The train crews frequently had to do their own signal and point shifting. They had to be armed with rifles to protect themselves from looters. On at least one occasion, an engine crew had to be found at short notice to replace others who had deserted. At other times the train personnel were called upon to render first-aid at bombed wayside stations. One train became derailed and was in danger of being cut off by the Japanese and abandoned. It was, however, rescued and worked up to Mandalay to continue evacuating casualties further north.

The Evacuation of Central Burma

When the breakthrough across the Salween became complete it was necessary to move medical installations northwards. Prome had to be evacuated and then the oil belt to the north, and this was accomplished by the river steamers operating up the Irrawaddy to Mandalay. A small number of casualties were evacuated to India by air from Magwe, where an attempt had been made to form a hospital centre. This marked the beginning of air evacuation of casualties.

With the final collapse of our forces in Southern Burma, the evacuation of casualties from Central Burma became a matter of great urgency. Two ambulance trains were despatched from Maymyo to Myitkyina in North Burma, and passenger rolling stock was used to transfer a further load of 435 less serious sitting patients to the same destination. Fifty patients were evacuated from Mandalay to Shwebo by ambulance car, and were then evacuated by air to India, together with other sick and wounded already at Shwebo. This small Burmese town was situated on one of the roads leading from Central Burma to the Kabaw Valley, where a track led to Imphal and India. Along this road refugees streamed towards India and were followed by our retreating forces. Apart from isolated instances such as Shwebo, organised evacuation of those who became sick with malaria, dysentery etc., along this disease-ridden route to India was impossible. The hospital river steamers moved up the Irrawaddy from Mandalay to Katha and assisted in the evacuation of casualties from Central to Northern Burma.

The Evacuation of Northern Burma

In the final stage of the withdrawal from Burma, the casualties collected in Northern Burma were evacuated by air to India. Dakota aircraft operating from Dinjan airfield in North Eastern Assam evacuated patients from Myitkyina airfield and a small number from Lashio on the Burma-China border. In ten days, during April, 1942, ten C-47 (Dakota) aircraft evacuated 1,900 sick troops and civilians. The 66 Indian General Hospital was moved into North Eastern Assam to provide additional hospital cover for these casualties, and all hospitals in the area worked at an emergency expansion level.

The fit civilian refugees and our retreating forces trekked from Northern Burma into North-Eastern Assam along the Hukawng Valley. No organised evacuation for those who fell sick in the highly malarious country of the Hukawng was possible.

CONCLUSION

The total number of casualties evacuated to India during the withdrawal from Burma was of the order of six thousand, whilst about thirty casualties had to be left behind.

In the withdrawal from Burma, the pattern of casualty evacuation, which was later to be developed in the far eastern theatre of war, began to appear. For the first time in warfare the air evacuation of casualties had been used on a moderate scale. Use was made of the four main methods of surface transport:—

- (i) Ambulance cars by road—a valuable but uncomfortable means of evacuation, especially in the type of country where good roads are rare.
- (ii) Ambulance trains by rail—a much smoother means of evacuation, but more vulnerable to the effects of bombing, desertion of railway personnel, etc.
- (iii) Hospital steamers by river—a smooth, comfortable and relatively cool, but slow means of evacuation.
- (iv) Hospital ships by sea—a comfortable means of evacuation (apart from crossing stormy seas, such as the Bay of Bengal in the monsoon season) usually with ample facilities for full medical care, nursing and feeding of the sick. Essential where long, overseas evacuations are necessary.

APPENDIX VI

Total sick wastage of 17th Indian Division from 24 May to 1 June 1942 (Inclusive)

16th Bde/Strength 1504

*Cases sent to 8 CCS	..	..	177
Cases detained in ADS & RAPs	..	..	127
Cases attending MI Rooms for treatment			226
<hr/>			
Total sick wastage	..	..	532
Sick wastage percentage	..	..	45.3

48th Bde/Strength 3142

*Cases sent to 8 CCS	..	..	126
Cases detained in ADS & RAPs	..	..	170
Cases attending MI Rooms for treatment			194
<hr/>			
Total sick wastage	..	..	490
Sick wastage percentage	..	..	15.6

63rd Bde/Strength 1696

*Cases sent to 8 CCS	..	..	163
Cases detained in ADS & RAPs	..	..	132
Cases attending MI Rooms for treatment			152
<hr/>			
Total sick wastage	..	..	447
Sick wastage percentage	..	..	26.3

Div Troops/Strength 3566

*Cases sent to 8 CCS	..	..	740
Cases detained in ADS & RAPs	..	..	100
Cases attending MI Rooms for treatment			534
<hr/>			
Total sick wastage	..	..	1,374
Sick wastage percentage	..	..	38.5

Total Div Strength	..	..	9,908
Total Div Sick Wastage	..	..	2,843
Total Div Sick Wastage percentage	..	..	28.7

*Most of the cases sent to 8 CCS had been evacuated up the line; about 250, however, were retained to be returned to the division on discharge from the CCS.

N.B.: Majority of the cases were Malaria, about 20 per cent of which had shown dysenteric symptoms.

APPENDIX VII

Government Medical Stores Depot Rangoon

(Major-General K. R. Sahgal)

Experience of the administration of the provision of medical stores in the Burma Campaign taught us various lessons for the future. A brief account of what happened may therefore be of interest. About June, 1941, the war clouds gathered round Burma and found the Army in Burma completely unprepared to cope with the emergency. The total strength of armed forces in Burma at that time did not exceed 5,000 and it was suddenly decided to raise the strength to 35,000 and later to 60,000. Following the example of India, the administration of Medical Stores Depot was taken out of the hands of civil authorities and placed in charge of the military medical authorities. This change of control gave greater elasticity to expand.

A. THE PROBLEM

Immediate problems at this stage were:—

- (1) to build up stocks from local services;
- (ii) to provide for expansion of the field medical section; and
- (iii) to find extra accommodation for stocks.

Building of stocks

X-rays sets, surgical appliances and instruments and essential imported drugs were obtained in large quantities from civil firms in India before India placed ban on export.

Expansion of Field Medical Section

About the end of 1941 the Medical Stores Depot was required to equip two general hospitals, two casualty clearing stations, two staging sections and two field ambulances which were to be raised. In addition the requirements of Indian units which were pouring in also had to be met. They were stated to have brought three months requirements with them but their subsequent needs considerably increased the responsibility of the Medical Stores Depot. Field Medical panniers and ebonite containers for tablets were not obtainable. Through the good offices of Sir Oscar de Glenveille, who was the Chairman of the Red Cross Society, modified form of standard panniers were locally manufactured and given water-proof covers. Compressed and roller bandages were also supplied by the Red Cross Society. Wooden containers were substituted for ebonite containers for tablets. It will remain to the credit of the staff of the Medical Stores Depot that the Field Medical Units were raised in record time in spite of many handicaps under which they laboured.

Extra Storage Accommodation

The authorities, after nearly six months discussion, agreed that extra accommodation was required for the large stocks of stores which had arrived from India. Plans to build a new medical stores depot were rushed through. Contracts for construction of new medical stores were placed about the time when the evacuation of Rangoon was being ordered. It is interesting to recall that a contractor actually submitted to the Government of Burma in Simla, a year later, his bill for having carried out the construction of a new Medical Stores Depot at Rangoon.

B. DISPERSAL OF STORES

With the bombing of Rangoon, on 23 December, 1941, it became evident that it was not safe to keep all stocks of medical stores under one, none too secure, roof. All bulk stores and reserve stocks were transferred to a building in Gygon a suburb near Insein, seven miles from Rangoon. About this time it was decided to establish a functioning depot in North Burma to meet the requirements of civil and military institutions north of Mandalay. The basement of Agricultural College, Mandalay was acquired for this purpose. It was indeed a fortunate move which later events proved after the evacuation of Medical Stores Depot at Rangoon. The evacuation of Medical Stores Depot, Rangoon was carried out up to the last under very trying conditions by a skeleton staff under Captain Holman and Assistant Surgeon C. Watts, IMD. Both these officers did sterling work at great personal risk. Valuable instruments, microscope, etc., abandoned by civil institutions were salvaged and packed with other stores. It is interesting to record that the Burma civil authorities in Simla when they heard of these salvage efforts preferred a claim against the Medical Stores Depot for these articles.

C. MANDALAY DEPOT

The depot started functioning about 1 March, 1942. The depot was greatly hampered by the fact that communications had broken down and collections of stores had to be done by the units themselves. After the bombing of Mandalay on 3 April, 1942 and the general withdrawal of troops from Southern Burma, Mandalay came within the danger zone and it was arranged that the stocks should be disbursed to three or four places; Shwebo, Lashio, Monywa and Myitkyina on bullock carts. No other form of transport was available. These dumps could never again be made to function as supplying depots. However, the general withdrawal of forces from Burma about this time made it quite immaterial where the medical stores reposed. They were no longer accessible.

COMMENTS

The information received from the Medical Directorate during the various phases of the campaign was weeks out of date. Much more accurate information was obtained from extraneous sources. This was to a great extent due to the secondary role assigned.

In modern warfare, when the communications are apt to break down, the normal method of supply through indents fails during conditions of stress.

Viewing the situation in retrospect it may be stated that the dispersal of medical stores to various places in the last phase of campaign served no useful purpose. Dispersal would have increased the usefulness of medical units which were left without any stores on account of loss of transport, if essential stocks of hygiene chemicals, sanitary appliances and drugs could have been dumped along the route of retreat as was done with rations.

APPENDIX VIII

Civil Medical Arrangements in connection with Population Movements following the Japanese Invasion of Burma

(Major Lyod Jones)

Civil Evacuation up to the Onset of the Monsoon

The mass exodus of civilians from Burma really began after the air raids on Rangoon on 23 and 25 December, 1941. Owing to inexperience the warden and first-aid party services did not function very successfully. The Burma Government had already arranged for refugee camps for use in the event of the city being bombed. One such camp was sited on the new race course and another about two miles from the Mingaladon aerodrome. Total provision of this sort was made for about 200,000 people. Although the arrangements in themselves were excellent, with adequate water supplies, sanitary facilities and communal kitchens, the camps were very little used when the actual emergency arose. The apparent reason for this was public mistrust of their safety.

The land routes available for people leaving Rangoon, were broadly speaking two. Firstly, up the main Irrawaddy river to Prome, through Tadeng and the Taungup Pass to Arakan and thence by sea from Akyab, or by land up to Cox's Bazaar and Chittagong in East Bengal. Secondly, by way of the Irrawaddy and Chindwin river valleys to Monywa and thence by various routes into Assam. In later stages of the evacuation, particularly after the loss of Mandalay and the advance of the Japanese up the Chindwin river, other routes still further north were explored and opened up, but the two routes mentioned took the first rush of the evacuees.

The Indian population of Burma was estimated to be between 1,000,000 and 1,200,000 most of whom were congregated in Rangoon. When it became apparent that a considerable proportion of this population was determined to go to India, an Indian Evacuation Committee was set up in Rangoon to ensure as far as possible that the evacuation should proceed on planned and orderly lines.

Evacuation steadily proceeded up to 20 February 1942, when official orders were issued that Rangoon should be completely evacuated by noon on 21 February. This of course meant an enormous addition to the numbers of evacuees already on the road North. An idea of the situation may be gathered from the fact that on 20 February, 200,000 refugees were reported to be between Monywa, the railhead on the Chindwin river from Mandalay, and Kalewa.

The condition of these refugees was pitiful. Long columns of weary, tired and sick men, women and children, the women often carrying one and sometimes two babies on their hips trudged along. The local inhabitants were often by no means helpful, often demanding and getting exorbitant prices for food and even for drinking water. Many died of exposure, starvation, dysentery and cholera, and their

emaciated forms were often perforce left lying under trees even before they were actually dead in the interests of the community group. Refugees who tried to get out of Burma by way of the Taungup Pass had terrible trials. Cholera broke out at Prome and by the middle of February, 100 deaths daily from cholera were occurring there.

On 19 February, the Agent of the Government of India in Burma informed the Government of Bengal that in view of the cholera situation at Prome the local authorities had decided to let everyone cross the river and proceed with the result that it was believed that between 10,000 and 15,000 people were between Prome and Akyab, a large proportion of whom had not been inoculated against cholera. The Bengal Government were, therefore, asked to help by sending anti-cholera parties to work in Akyab, bringing their own medical supplies and equipment. Bengal was of course directly interested as these refugees were eventually going to East Bengal and there was every probability that they would introduce cholera into that part of the country.

Immediate steps were taken by the Government of Bengal to meet the situation. Two rest camps were instituted, one at Ukha and another in the Chittagong Division. The Director of Public Health, Bengal, was instructed to send as many doctors as possible to Chittagong and from there to Akyab. On 26 February, a joint medical and public health team consisting of 3 physicians, an Assistant Director, Public Health (ADPH) with two Health Officers and other auxiliary staff was sent direct from Calcutta to Akyab. Four additional doctors left Chittagong for Akyab, on 2 March, and nine more were sent by 12 March. Up to 2 March, 85,000 doses of cholera vaccine were despatched to the area by the Government of Bengal; these were replaced by supplies sent by the Central Research Institute, Kasauli. Many of the refugees were Madrassis, and it was, therefore, decided to ask the Government of Madras if they could also assist. It was suggested by the Government of Burma that Madras might send a hospital ship with staff and equipment sufficient to deal with about 30,000 evacuees, direct to Taungup.

In the meantime, five ships had been sent to Akyab to evacuate refugees by means of a shuttle service between Akyab and Chittagong.

The Madras Cholera Relief Unit of 18 members left Madras on 8 March, carrying two doctors with additional sanitary staff, 75,000 doses of anti-cholera vaccine, bleaching powder and other necessary equipment. The Unit reached Taungup on 16 March and did most valuable work among the refugees in that Area and by 4 April the situation had become considerably eased. The greater part of the refugees had passed on to East Bengal and the outbreak of cholera had been brought under control. The unit, therefore, returned to Madras on that date. By the middle of April, another route, by way of Tamu on the Assam-Burma frontier, provided almost the only outlet from Burma into India.

In the middle of these difficulties was the mountain barrier separating India from Burma, with mountain passes ranging from 5,000 to 8,000 feet high. For the refugees there was no avoiding these

mountains. To cross them required from 10 to 20 days of arduous physical effort. In places the ground was covered with dense tropical jungle through which a path had to be cut before movement was possible. Leeches abounded everywhere. In places sandflies were in such abundance as to deny any rest to the refugees at night, no matter how tired they were. For their rescue it was, therefore, necessary to push medical help and food supplies forward into the area, at the same time mobilising every form of transport that could be found.

Medically there were many problems of which possibly the most important was the prevention of cholera, involving the provision of huge stocks of cholera vaccine and procurement, supervision and chlorination of water supplies. Malaria was also a constant menace, the whole of the country involved being either malarial or potentially so. There had been a severe outbreak of cerebrospinal meningitis in the Angami-Naga country in 1937, and in view of the great aggregation of both labour and evacuees along the Burma-Assam Road, an outbreak of cerebrospinal fever remained a distinct possibility. Stocks of the sulphonamide group of drugs were, therefore, maintained for treatment, in case preventive measures should fail and an outbreak did occur.

One major obstacle in evacuating refugees from Burma along the Burma-Assam Road was that it was the only practicable road for the supply from India to the armies in Burma. At least 30,000 labourers were employed on this work between Imphal and Tamu at the beginning of 1942, and it was considered imperative that the passage of refugees should neither impede the construction of the road nor the passage of essential military traffic along it.

As a preliminary measure, Dimapur was made the dispersal centre for refugees arriving along the road. Col. A. M. V. Hesterlow, IMS, was appointed Chief Medical Officer, India-Burma Road, with headquarters at Imphal. Lt.-Col. E. T. M. Taylor, IMS, was also appointed for duty on the road with his headquarters at Tamu, an Assistant Director of Public Health, and 10 Sub-Assistant Surgeons were also sent from Assam in February. Mr. J. C. Higgins, CIE, was appointed liaison officer at Imphal. At the same time Colonel Shortt, the Inspector-General of Civil Hospitals, Assam (IGCH) asked for 30 Sub-Assistant Surgeons, 1 Sanitary Inspector, 10 Compounders and 200 Sweepers from the Governments of Bengal, Bihar and the United Provinces.

It was agreed to establish dispensaries at intervals along the whole road. On Section I there were already permanent dispensaries at Piphima, Mao, Kangkokpi, Thoubal and Kakching, as well as a hospital with 25 beds at Imphal. In the remaining sections there was practically no permanent organisation. It was accordingly decided to establish main dispensaries at intervals of about 27 miles and in between the dispensaries, 10 dressing stations. Each dispensary was to have one Sub-Assistant Surgeon and one Compounder. Complete equipment for all these dispensaries and dressing stations, was supplied through the Medical Stores Organisation of the office of the Director General Indian Medical Service (DGIMS).

On 22 February, it was reported that cholera had broken out

among the refugees at Tamu. It was immediately decided that quarantine camps should be established, for inoculation and detention of refugees for the period of quarantine. This was essential from two aspects. Firstly, for the protection of the refugees themselves and to prevent the introduction of cholera into Assam, and secondly, which was even more important from the military point of view, to guard against an outbreak of cholera among the labourers employed on road construction, which would certainly have led to a flight of labour and complete stoppage of work on the road.

At this period, 22 February, the refugee position as a whole was reported to be very bad. Up to a quarter of a million people were reported to be on trek; about 100 deaths from cholera were occurring daily at Prome; plague had broken out at Monywa Camp; and at camps north of Rangoon thousands were awaiting transport, and thousands more were walking north. The position was, therefore, desperate. On 26 February, H.E. the Viceroy communicated with the Governor of Burma and the Secretary of State for India by telegram pointing out that if India was to render essential military assistance to Burma she must have complete powers of control over the Imphal-Kalewa Road, in order to prevent congestion on the road, disturbance of labour and importation of disease by refugees from Burma. Intake along the road must be limited to 500 refugees a day and to prevent confusion the exodus from Burma by this route must be controlled at Monywa. It was stated categorically that the only way of accomplishing these objects was to exercise control through Military Commanders responsible to the Commander-in-Chief in all matters affecting the Imphal-Kalewa Road, including the passage of refugees and the authority to give orders to the Commissioner, Sagaing, and the Deputy Commissioner, Monywa.

In pursuance of this plan, Major-General Wood left Delhi on 5 March, to take up the appointment of Administrator General Eastern Frontier Communications. Following this appointment, the Commissioner, Sagaing, considered that entry to the road must be primarily controlled by establishment of camps in the Mandalay district, by restriction of railway traffic to Monywa and Shwebo, and by restriction of road and river transport at Pakkoku. Secondary control points should be maintained at Kalewa and finally Tamu.

Towards the end of February, a refugee camp at Dimapur was established, and a site for a 25 bedded hospital was selected. In view of reports of increased number of refugees and of outbreak of cholera, it was decided to organise refugee medical services in Imphal, and on the road between Pael and Tamu. Camp sites on Section II of the road between Pael and Tamu were accordingly selected in consultation with the military authorities, following which Col. Shortt decided to go through to Tamu personally to choose actual sites and make sketch maps from which camps could be quickly constructed. A Sub-Assistant Surgeon was left at Pael, and another at Lokchao, where there were two cases of cholera, with limited supplies of cholera vaccine. In view of the cases of cholera an urgent call for assistance was sent to the Government of Assam asking for two epidemic units to be sent to Imphal for duty on the road.

In Tamu cases of cholera had already occurred among P.W.D. labour beyond Tamu. Police and forest guards had, however, been sent out to prevent all refugees from entering Tamu until they had been inoculated. Immediate telegram was sent to Shillong asking for 50,000 doses to be sent by air for use on the Burma side of Tamu. At Saibam there was another case of cholera. Arrangements were, therefore, made to inoculate the whole of the Nagas from Mao to Dimapur, as well as the inhabitants of villages on the road. The intention was to inoculate all the people on the remainder of the road as soon as the epidemic units arrived and, by 1 March, inoculation at Tamu was in full swing. All people inoculated were given certificates and it was believed that practically no refugee was getting through uninoculated.

In order to accommodate Indian refugees, a new route was proposed between Mintha and Heirock, a diversion from the old road, along which a better water supply was available than on the Palel-Tamu Road.

On 1 March, the IGCH Assam in company with a young Sub-Divisional Officer set out from Heirok with about 1,000 Nagas and Kukis to site three camps along this new route, and simultaneously to arrange for the commencement of actual construction and the establishment of water points. There was no difficulty in selecting the first camp at Nangtak as the situation was ideal with plenty of ground for erecting tents and a very good and abundant water supply, from the river. Building material was plentiful, both jungle and thatching material being available.

The following day the IGCH left to select the site for the next camp, leaving 300 of the labour force with the Sub-Divisional Officer to complete the Nangtak camp. The only comparatively level ground was at the village of Sita which was by no means an ideal site, for the proposed camp was at a height of 5,000 feet. As there seemed no alternative, the construction of the camp was commenced on 3 March and by the evening of 4 March seven huts were nearly completed and the sites selected for a dispensary and camp commandant's hut. On 5 March, Colonel Shortt left Sita to site a third camp, leaving about 200 Nagas to complete the rest of the work. He first went along the Narum bridle path as far as Narum, accompanied by the remaining 500 Nagas and Kukis, without finding any water supply adequate for a large camp. He, therefore, retraced his steps to Dolaibang, and from there tried a new route further south. This brought him to Lamlong where he decided to site and construct the third camp. Building sites were reasonably satisfactory and a good water supply was available from the stream.

By 8 March, seven huts had been completed and sites were chosen for more huts, a dispensary and a camp commandant's hut. On the morning of 8 March, there were two cases of cholera and in the afternoon the Sub-Divisional Officer arrived from Sita and confirmed that there had been more cases of cholera on the Tamu-Palel route. In the afternoon further cases of cholera occurred which were treated with bacteriophage. It was, therefore, decided to return to Tamu without delay and telephone for a Sub-Assistant Surgeon and medical supplies for each of the newly sited camps.

The whole Heirok-Mintha route was surveyed, and three camps each to accommodate 1,000 refugees were constructed in a period of seven days, a miracle of rapid improvisation and organisation. The IGCH had gone in at the Indian side with about 1,000 Nagas and Kukis and emerged at the Burma end with only 13. Some had died of cholera, some fallen by the way for other reasons and the remainder had deserted on account of the deaths from cholera until none was left.

At Tamu there was a complete stoppage of evacuation owing to difficulty in obtaining porters. The position was beginning to get out of control as the camp had only been constructed to hold 600 and about 3,000 refugees were already crowding the camp and the numbers were increasing hourly. The police force was totally inadequate and unless something could be done immediately conditions would have become completely uncontrollable and a large number of uninoculated refugees would have poured along all routes spreading cholera and dysentery far and wide. In order to prevent this, it was essential that a convoy should leave on the same day. A Gurkha officer and two men were sent to obtain 150 porters. This they did without difficulty. The same procedure was adopted the next day without any trouble. On the third day as many porters as were required were forthcoming at the rate of Rs. 6 per head. The prompt adoption of these firm measures undoubtedly cut short a most ugly situation and certainly saved a large number of lives which would otherwise have been lost.

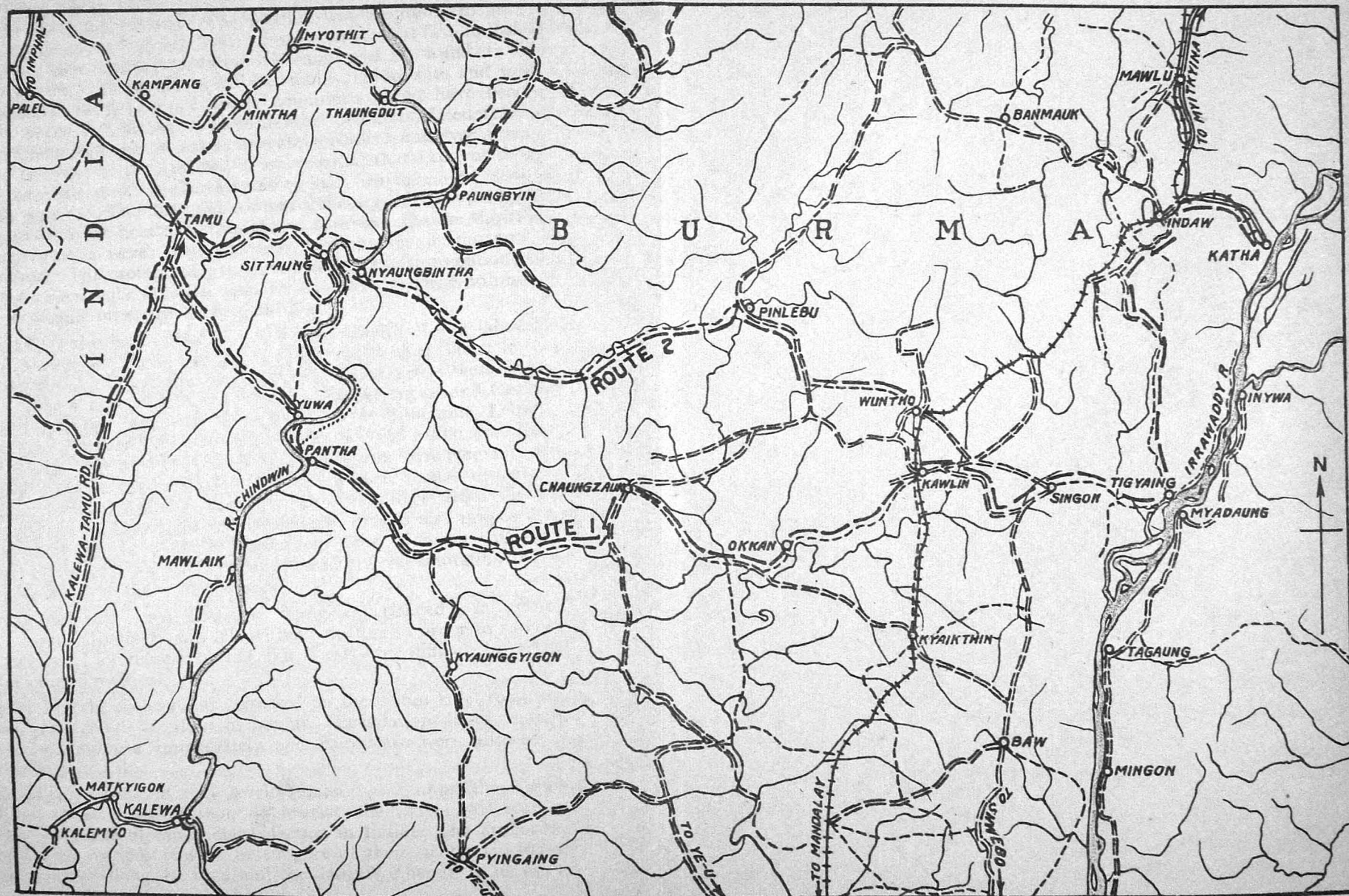
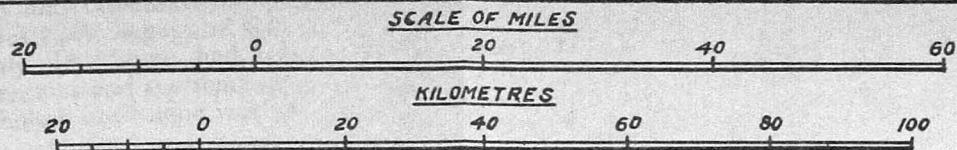
Whilst all this was going on at Tamu, another 1,000 labourers were sent to complete the camps already sited by Colonel Shortt on the Palel-Tamu Road. Simultaneously about 2,000 labourers were taken to construct seven camps along a route between Bishenpur and Cachar. The projected camps along this last route were at Bishenpur, Leimtak river, Khopum, Senoalok (59th mile), the Barak, the Maku and Jhiri. It was proposed to have a Sub-Assistant Surgeon, arrangements for chlorinating water, a camp guard of at least ten men, a small dispensary and a European commandant recruited from volunteers from the tea garden managers and assistants at every camp. It was also proposed to send Colonel Hesterlow, IMS., to Kalewa or even Monywa with staff to arrange for inoculation of the refugees and general sanitation before the refugees reached the Assam border.

Great difficulty was however being experienced in getting doctors. Assam absolutely was left without doctors in order to provide medical personnel for refugee's relief, but it was very difficult to recruit men from other Provinces.

By 11 March, cholera had increased on the Tamu-Palel road and there was widespread desertion of labour. Evacuation of all Indians was, therefore, stopped immediately and Europeans were allowed to pass at their own risk.

About 50 Europeans and Anglo-Indians were using the Tamu-Palel Road daily. The decision to restrict the use of this road to Europeans only led to much dissatisfaction in India. The authorities concerned gave various reasons in support of their action (including shortage of water along the road and the dangers inherent in its use to

MAP SHOWING ALTERNATIVE ROUTES FOR REFUGEES TO AVOID PASSING OVER KALEWA - TAMU ROAD



the refugees themselves). The Indian observers contended that it was a glaring example of racial discrimination.

By 24 March, arrangements on the Mintha-Heirok by-pass had been fairly well completed and 1,500 Indian refugees were passing through Lamlong daily.

The next stage was to plan for mass evacuation up to the limits of the increasing mechanical transport resources for all refugees without distinction by the Tamu-Palel Road. The limit here was the progress which could be made in the road construction. It was also intended to keep both the Mintha-Heirok and the Bishenpur-Silchar routes open; the first to cater for any excess over the MT capacity on the Imphal Dimapur Road.

It was regarded as impracticable to re-open the Tamu-Palel Road for any but mechanical transport for two reasons, firstly the shortage of water and secondly that the Indian Tea Association labour, which was working on the construction of the road, would only continue to work under a guarantee that the refugees, who previously imported cholera, would be kept out of contact with them.

In spite of the measures taken to divert refugees from the main Tamu-Palel Road, large numbers still managed to evade the guards and pass either along or near the road. On 31 March, Major-General Wood reported that cholera was prevalent and increasing amongst the men working on the road and that labourers working on that section were deserting. There was also much cholera on the Kalewa-Tamu and the Kalewa-Ye-U sections in Burma itself and labourers there were also deserting in very large numbers. The Government of India was, therefore, requested to send one Pioneer Battalion immediately to Tamu to work on the Kalewa section of the road and hold two other Pioneer Battalions ready to proceed as soon as possible if the labour situation could not be stabilised. As a further precautionary measure 50,000 doses of cholera vaccine were dropped by parachute at Kalewa on 16 April. At the end of March, there was a good organisation for the passage and care of refugees from Tamu to India and the position of some weeks earlier, when Tamu was a sort of bottleneck, was completely altered. The organisation for refugees control on the Burma side of Tamu was primary responsibility of the Burma Government. On 5 April, General Wood decided to take over all refugee arrangements on the Tamu-Kalewa section of the road (Section III and IV) during the second half of April, and asked for additional sanitary personnel from Assam.

The military authorities were at the same time very much concerned at the tremendous number of refugees who were passing along the Tamu-Kalewa Road and the consequent desertion of labour employed in its construction.

To reduce the number of refugees on the road and thus relieve the military situation, the following alternative routes for refugees suggested by the Government of Burma were, therefore, discussed:—

ROUTE 1—Katha (on Irrawaddy), Indaw, Kawlin, Okkan, Chaungzauk, Pantha (on Chindwin), thence to Yuwa or Sittaung (both on Chindwin) and on to Tamu.

ROUTE 2—Wuntho, Pinlebu, Nyaungbintha, Sittaung (on Chindwin), thence on to Tamu by road.

Both these routes avoided the Kalewa-Tamu Road completely. As soon as new camps could be opened on the above two routes it was also hoped to reduce the number of refugees on the Kalewa-Tamu Road by sending as many as possible up the Chindwin river by boat.

Early in April the Indian National Congress offered to raise a medical unit to render assistance to Indian refugees from Burma on the Manipur and other routes. It was suggested that the unit be employed in four or five camps on the Tamu-Sittaung routes and the suggested strength was of eight doctors, eight compounders, two sanitary inspectors, with one month's medical stores and equipment based on an estimate of 300 cases per day. There was some delay and misunderstanding due to the reluctance of the Congress Unit to serve under the orders of the officers of the organisation already existing, but eventually the unit left Calcutta on 4 May. They rendered yeoman service during the later and critical stages of the evacuation by this route.

The plight of refugees in Burma was at this time very grave. Mandalay had been heavily bombed. The general hospital was reduced to ashes on 7 April, although the patients and staff were saved. Conditions in the refugee camps at Mandalay were deplorable, and it was decided that all the camps should be moved to areas north of the town, and that to combat cholera all uninoculated persons and those who had not passed the "low immunity" period subsequent to inoculation, should not be allowed to move into the new area.

The position of these evacuees still remaining in and around Mandalay during the third week of April was desperate. They were trapped between the advancing Japanese to the south and east, with their retreat northwards more or less cut off by the prospect of the monsoon within a couple of weeks, which for a period of at least two months would effectively bar the overland routes which had hitherto been used. If these people were to be got away, desperate remedies were called for and these had to be put into operation on the Burma side. Organisation at Tamu was perfectly capable of absorbing and successfully passing on into India, any refugee who could get as far as that.

There was by this time a fair medical organisation on the Kalewa-Tamu section of the road. Including the medical and health staff at Tamu and Kalewa, there were two IMS officers, two Burma Civil Surgeons, three Assistant Surgeons, and twenty-seven Sub-Assistant Surgeons working on the section. All but four of these doctors were recruited from the Burma Medical Services. With very few exceptions the medical supplies were from Burma. Cholera vaccine and vaccine lymph had been sent in from India with Lt-Col Taylor, IMS., who was in control at medical headquarters of this section of the road at Tamu. These vaccines were not available in Burma and there can be little doubt that their prompt supply from India averted major epidemics of cholera and small-pox in the area. The Indian Combined General Hospital

Burma, also took prompt action in transferring the Insein Hospital with all its supplies to Kalewa, in the absence of which the medical position would have been completely chaotic. These supplies were constantly reinforced by medical supplies from Mandalay.

Notwithstanding this, Major-General Wood, on 21 April, in a report to the Defence Department of the Government of India, expressed extreme dissatisfaction with the way in which the Burma administration was handling the refugee problem and pressed his view that the Government of India should take over complete control of the Upper Chindwin area, if for no other reasons than that the whole force and constant support of the civil power was necessary in the interest of both military and refugee organisation. He pointed out that the functioning of the Burma civil organisation in the Upper Chindwin district was not only precarious, but that apart from an exiguous control by the Commissioner, Sagaing, there was no functioning higher authority. Since the bombing of Mandalay on 3 April, communication with the Commissioner, Sagaing, was infrequent. Even before this no civil guidance had come from the headquarters of the Burma Government at Maymyo nor were the heads of departments at Maymyo either guiding or visiting the upper Chindwin district.

General Wood also complained that so long as the Upper Chindwin remained under the nominal control of Burma Government, a whole series of futile red tape regulations had to be complied with.

General Wood was extremely critical of the Burma Government proposal to build a camp for 50,000 refugees at Katha and to establish routes overland from Katha to Sittaung.

It was a feature of the whole of the evacuation from Burma, and indeed of the whole of the Burma Campaign, that action only too often lagged behind the events which necessitated it. This was in part caused by the totally unexpected success of the Japanese armies and no doubt largely by the lack of sufficient supplies of equipment and personnel to carry out schemes which were realised to be highly desirable, but simply could not be put into operation on account of these deficiencies. Nevertheless there was very defective realisation of the true position even in circles which might have been expected to see the writing on the wall. Even after the evacuation of Rangoon, for example, there were tremendous outcries that the Burma Government and the Army authorities did not give sufficient warning of the necessity for evacuation, although the situation should have been plain enough to anyone who could read and was endowed with the slightest quotient of common sense.

An illustration of the lack of appreciation of the gravity of the position by the Burma Government is afforded by a message they sent to the Defence Department of the Government of India at the beginning of May, stating that 20,000 Indian refugees would be reaching Kalewa starting on 3 May, in groups of 400 daily. The India Government were asked kindly to provide food at Kalewa, with three quarters of a ton of quinine, 30,000 doses of cholera vaccine and 30,000 doses of small-pox vaccine.

On 10 May, Lt-Col Taylor, stationed then at Tamu, was ordered to close down all evacuee arrangements, and refugee control on the Burma side of Tamu was finally closed on 17 May. On that date it was estimated that there were between 5,000 and 10,000 refugees on the road west from Homalin. There was no organisation whatsoever on the route, but even at that late date the Burma Government reported that they were taking steps to provision it, too late of course.

The closure of the Evacuation Scheme on the Tamu-Palel Road on 17 May, was by no means the end of the troubles of those evacuees who had managed to reach the Palel area. Imphal itself was heavily bombed on 13 May, and this led to all sorts of difficulties. By 19 May, practically the whole of the Indian population of Dimapur had fled.

The last rush of evacuees from the Manipur Road was still pouring in and it was estimated that, together with local evacuees from the Imphal area, 3,000 people were passing through the Dimapur Evacuation Camp daily. Fortunately trains were still running to Gauhati and special efforts were made to evacuate as many of the refugees as possible by this route. The general evacuee arrangements, although functioning very efficiently before this unexpected rush, were overwhelmed and there was a serious shortage of medical and sanitary staff.

As an auxilliary measure, as many refugees as possible were diverted via Wangjing and Bishenpur and thence on to Silchar. New camps were added between Bishenpur and Silchar and at least 35,000 refugees passed by this route during this period, with negligible casualties.

These combined measures with minor readjustments proved adequate to meet the situation, and by the end of May the stream of refugees passing into Assam proper had been reduced to a mere trickle, although a skeleton organisation was still maintained against the possibility of a further ingress of refugees after the end of the monsoon.

Civil Evacuation after the Onset of the Monsoon

The steady advance of the Japanese armies, their persistent bombing in advance of their land troops and the onset of the monsoon, had rendered evacuation of refugees out of Burma into India by the Manipur Road impracticable by the middle of May.

With the exception of the outlet to the extreme north-east of Assam, the only remaining routes were those from Katha, by various paths through the hills to Kohima. There was practically no organisation along this route, although the intention of the Government of Burma had been to stock it with food supplies and to establish evacuation camps on the same lines as had been done hitherto on the routes further south.

There is no doubt that a fair number of refugees did eventually manage to escape over the hills to Kohima in spite of the almost insuperable difficulties, but thousands more were trapped in the Naga Hills from May until August and casualties must have been heavy. How heavy will probably never be known.

The number who tried the paths to Kohima during the later stages of the evacuation were, however, small in comparison with those who traversed the newly constructed jeep road or parallel paths from Mogaung into Ledo in Assam.

The Indian Tea Association* had already rendered invaluable assistance in the making of the Manipur Road; in fact most of the labour employed and the greater part of the supervisory and medical staffs had been supplied by them and had worked magnificently. They now turned their attention to the Ledo Road and provided labour, supervision and medical personnel and supplies. In addition to the labour provided by the Indian Tea Association, labour units from various Indian States were also sent to the Ledo area in gangs of 50 under the charge of a state official, each unit bringing its own medical staff. In this way a total labour force of about 15,000, fully equipped and staffed, was raised.

Early in May the Defence Department of the Government of India instructed the Administrator General, Eastern Communications, to consider welfare and control of the labour force on the Ledo Road. Arising out of this the IGCH Assam was deputed to organise the medical arrangements and thirty Sub-Assistant Surgeons were recruited from the Provinces of India other than Assam and were sent to Ledo.

By the end of May it became apparent that this route was going to be the only practicable one for civilian refugees and it was anticipated that large numbers would try to get through the Hukawng Valley to join the new road at Shingbwiang. The number likely to attempt to use the road was estimated to be about 5,000 Europeans and 10,000 Indians. Some food had already been transported as far as about 25 miles south of Shingbwiang and it was considered by the Government of India that it might be possible to drop food and other essential supplies at Shingbwiang by aeroplane.

During the first week of May, large quantities of rice were sent to Shingbwiang and stores for the use of labourers expected to arrive to work on road construction. On 8 May, however, news arrived from the Burma side of Shingbwiang that 500 European and 10,000 Indian refugees were on their way up the Hukawng Valley. At the same time a runner arrived from Ledo to say that a plane would come over the following day and drop food supplies by parachute. The plane duly arrived and dropped supplies, including rice, which was not at that time necessary, as there were ample supplies already available. The first to arrive were the road labourers who had been working on the Burma side of Shingbwiang, who at once absconded when they heard that refugees from Burma were on the way. Eighty of the labourers were, however, sent with two officers to build rest camps at Namyung and the Pangsao Pass.

About the middle of May, troops started to arrive and soldiers and civilians poured in at the rate of 800 a day—convalescent British soldiers, garrison troops from Myitkyina, European civilians, Anglo-Indians

*For further details of the work done by the India Tea Association please see volume entitled *Administration*.

and Indians. Some of these were sick and exhausted by the first stages of their journey. At this time the rains had not properly set in and conditions in the Hukawng Valley were reasonably good. In spite of this many of the refugees when they arrived at Shingbuiyang were completely overawed by the prospect of crossing the Naga Hills and just resigned themselves to their fate. Many died, although there was no shortage of rice. The majority, however, stayed two or three days to recuperate and then made the effort to cross the Naga Hills, before the rains started in real earnest.

After the first rush of refugees had passed, there was a slight lull. Dead and dying people, however, were everywhere. Cholera had broken out. The Kachins were ferrying refugees across the river and were managing to get about 1,000 a day safely over. At Yawbang on the Tanai River conditions were similar. In spite of the ferrying both rivers were 'bottlenecks' and refugees were crowded at the crossings. Further back still there was great confusion. Burma Government officials at Maingkwan were advising refugees to remain there until the rains stopped. On the other hand the RAF were dropping leaflets advising people to make for India with all speed. The refugees were, therefore, in a dilemma, but on the whole they followed the advice of the leaflets and pushed on towards Assam. By the end of May, affairs in Shingbuiyang were going from bad to worse and food was running out both there and at Yawbang.

During the first week in June, a large number of Chinese troops arrived at Shingbuiyang. They were ravenous, having eaten nothing but grass for seven days. They ate the bulk of what food remained and left again about the middle of June. At this time there were about 2,000 Indian refugees living in Naga huts at Shinbang. There were practically no officials to assist in organisation. Most of the Burma Government officials had been evacuated by air and those who travelled overland had gone straight through.

By the middle of June, the food position had become desperate and urgent appeals were sent to the Government of India for assistance, and steps were immediately taken for food to be dropped by air.

There was great difficulty in ensuring fair distribution of food. People were dying everywhere with an average death rate of about 200 daily. No medical supplies were dropped by the RAF until July, at which time more of the Chinese Army began to arrive and like their predecessors, seized bags of rice and food as soon as they landed on the ground from the planes. In August, the RAF dropped some tarpaulins and an attempt was made to build shelters with tarpaulin roofs.

During the latter part of August, when the rains in the Hukawng Valley were getting very much less, two Gurkhas arrived at Shingbuiyang from Ledo to search for their families. They had managed to come in nine days. A party of Kachins and Nepalese was sent to the Namyung river crossing to make preparations for a general exodus. Every evacuee was issued with ten days rations, a small supply of quinine substitute and surgical dressings. The exodus started on 28 August, nearly four months after the Japanese had occupied Myitkyina. As the people

from Shingbuiyang moved out, their places were taken by refugees who had been held up during the rains further down the Hukawng Valley. They told terrible tales of people falling in the mud through sheer exhaustion and dying there; of looting and murder. Near Maingkwan whole villages had been looted and burned to the ground.

By the first week of September, the passage of refugees through Shingbuiyang had again assumed some order. Those now arriving continued on into Assam after a day or two's rest and after drawing rations for the journey. By October, it was estimated that 40,000 refugees had then passed through Shingbuiyang, excluding the remnants of the Chinese Armies.

One outstanding feature of the evacuation through the Hukawng Valley was the assistance freely given by the local Naga tribes. For them the passage of the refugees was a real tragedy. Cholera, dysentery and other diseases arising from lack of sanitation which were introduced, affected not only the refugees themselves but everybody with whom they came into contact. Their own meagre supplies of food were eaten up, their villages were pillaged and destroyed. The normal routine of their lives was completely upset. They were under no obligation to do anything. It must have been quite obvious to them that organised government in Burma had ceased to exist and that there was no risk of punitive expeditions, no matter what they did. In spite of this they gave their goods and their services freely. Many refugees were saved entirely due to their efforts. Their self-sacrifice will remain one of the few bright spots in the story of the evacuation from Burma.

The Evacuation in Retrospect

On all routes probably the greatest difficulty was the lack of transport, although no effort was spared in raising local transport whenever it was available. Apart from motor vehicles used specifically for refugees, elephants, bullocks, mules, ponies as well as porters and small boats, were utilised. It was impossible to reach certain localities and these had to rely on food dropped from the air. To add to the miseries of the refugees there was an early and very heavy monsoon, which over most of the area, averaged five and a half days of heavy rain each week. All routes over the hills became extremely arduous and at an early stage deteriorated into litter better than mud slides and buffalo wallows.

Medically there were almost insuperable obstacles. One of the biggest worry was the constant threat of outbreaks of cholera. Steps to lessen the probability of this eventuality were, therefore, taken at the outset. Large quantities of preventive vaccine were supplied from Indian sources, from Shillong, Madras and Kasauli, and frantic efforts were made to inoculate all refugees in Burma before they reached India. Supplies of vaccine were accordingly distributed as far as Kalewa and Monywa and special endeavours were made to ensure that all evacuees should be protected before they reached Tamu on the Burma-India border. Any one avoiding inoculation before reaching Tamu was inoculated there. Very few refugees passed beyond Tamu uninoculated. Arrangements were made to provide all protected persons with certificates

and orders were issued to Sub-Assistant Surgeons on all routes to inoculate all persons not carrying such certificates.

Every place was also supplied with adequate quantities of cholera and dysentery bacteriophage, with instructions that this should be given in the early stages of all cases of diarrhoea. Small-pox too, was one of the diseases which at one time threatened to render the use of the Manipur Road unsafe, but energetic measures soon brought the threatened epidemic under control.

Provision of adequate water supply was a problem on all routes, firstly in finding any water at all in the hills and secondly in getting it properly chlorinated when it was available. Along the Palel-Tamu route water was supplied in oil drums. Sub-Assistant Surgeons on all routes were supplied with bleaching powder or chlorine solution and the camp commandants, who were nearly all ex-managers of tea-gardens, were kept fully alive to the importance of keeping the water supplies safe. In some places concrete tanks were erected for the sake of ease in chlorination. The greater danger eventually in connection with the supply of water was that of refugees and labour using unauthorised sources of supply. The conditions of marching were very tiring and the tendency was to drink water wherever it seemed most convenient and easy, irrespective of whether it was safe or otherwise. All unsatisfactory sources of supply were, therefore, kept policed as far as the situation would allow.

Conditions on all routes were admittedly primitive. The rapidity with which the organisation had to be set up, made it imperative to sacrifice quality for quantity to a very great degree. Improvements were nevertheless constantly being suggested and put into effect as quickly as circumstances permitted. The paramount need was for the speedy transfer from Burma to India of the greatest possible number of refugees and to meet this need the organisation of food, shelter, water and medical arrangements along difficult and arduous routes was carried out in a remarkably short space of time.

It is virtually impossible to translate the achievement into terms of figures. By reason of the speed with which the evacuation problem developed and because of the delay which individual registration would have entailed, no complete count was kept of those who were evacuated. The following figures may, however, be accepted as an approximate estimate:—

By land routes into East Bengal	..	200,000
Via Manipur Road into Assam	..	178,000
By sea from Rangoon and Akyab	..	70,000
Into North-East Assam via Shingbwiyang		40,000
By air	..	12,000
Total		500,000

The number of people who died during the evacuation, will probably never be known. Many died in places where their bodies will

never be found. Many were drowned in rivers and others died or were drowned in mud. It has been estimated, however, that the total deaths were somewhere in the neighbourhood of 12,500, that is, two and a half per cent of those who came through. This is certainly a distressing figure, but taking into consideration the frightful conditions that had to be faced, that there was a large proportion of women and children, and that thousands of the refugees were old or sick before they started on their heroic trek, on the whole we may be truly thankful for the result of the efforts.

APPENDIX IX

14th Indian Division

ORDER OF BATTLE

(Medical Units only)

Divisional Units

- 41 Indian Field Ambulance
- 45 Indian Field Ambulance
- 60 Indian Field Ambulance
- 28 Indian Field Hygiene Section
- 6 Field Ambulance.

Non-Divisional Army and GHQ Units

- 20 Motor Ambulance Section
- 35 Motor Ambulance Section
- 15 Indian Casualty Clearing Station
- 63 Indian Field Ambulance
- 8 Indian Field Transfusion Unit
- 6 Indian Mobile Surgical Unit
- 7 Indian Mobile Surgical Unit
- 44 Indian Staging Section
- 46 Indian Staging Section
- 50 Indian Staging Section
- 23 Indian Anti-malaria Unit
- 18 Indian Anti-malaria Unit
- 1 Indian Bearer Company
- 74 Indian General Hospital (Five Sections)
- 16 Mobile X-Ray Unit
- Hospital ships, Sampans.

APPENDIX X

14th Indian Division Medical Notes for Period Ending 31 December 1942

General Health of Troops

By the end of the monsoon, the physical condition of the troops was not all that could be desired in a formation about to open an offensive. A large number of men in each unit had been in hospital with malaria or dysentery. All were to some extent tired or debilitated. The sick rate remained consistently high throughout. Admission to hospital varied between two and ten per thousand per day (average about five per thousand).

Malaria

Total cases admitted to 15 Indian Casualty Clearing Station from April to December 1942 were 7500 (Average strength of the troops during the same period was 15,000). Actual number of malaria cases in each month was as under:—

Month	BOs	BORs	IORs and Non- Combatants
April	1	1	28
May	3	63	433
June	7	76	541
July	12	143	436
August	2	93	450
September ..	7	86	402
October ..	10	130	678
November ..	33	556	1931
December ..	13	268	1114

Treatment of the cases was greatly hindered by the necessity of evacuating the sick frequently from unit to unit often by improvised or unsuitable transport. Many medical officers failed to realise the importance of accurate and legible entries on the field medical cards. Occasionally there was shortage of drugs. The result was a large number of relapses.

About 10 per cent. of cases required intravenous quinine. It took several fatalities to teach the medical officers the vital importance of administration of intravenous quinine early in cases not responding to oral quinine or showing other unusual features.

The necessity to provide empty beds for acute cases at all costs meant that many patients had to be discharged before completion of the full treatment. The continuity of after treatment varied with the unit to which the patient was discharged.

The greater part of the country was under water or was water-logged most of the time and widespread control of mosquito breeding was not feasible. An anti-malaria unit was allotted to the 14th Indian Division but it was only in a few selected areas that it could hope to achieve effective control of breeding.

The policy adopted (which was supported by DDH & P, General Headquarters (India)) was to accept breeding as inevitable and concentrate on (a) destruction of adult mosquitoes by pyrethrum spray both in huts occupied by troops and in civilian huts within $\frac{1}{2}$ mile radius, and (b) individual protection against mosquito bites. The effectiveness of spraying was diminished by the difficulty of achieving a high concentration in bamboo huts of open construction and in many cases in a bad state of repair. There was no shortage of pyrethrum solution but quality of spray pumps available at that time left much to be desired. The anti-mosquito cream was greasy and very uncomfortable to use in humid heat of Bengal and Arakan. It was universally unpopular and probably its use by troops not under direct supervision was at best sporadic.

Dysentery

Dysentery was not as prevalent as might have been expected among troops living in proximity to villages. The maximum admissions in a week were twelve only.

Enteric

Only one case occurred with fatal result in an officer who had evaded TAB inoculation.

Cholera

An outbreak of cholera in Bawli Bazar occurred during the first three weeks of December, 1942. (Source—Refugees from Burma). This outbreak resulted in twenty cases with fifteen deaths among military personnel (mainly amongst recently arrived drafts). Only two of the cases had documentary evidence of up-to-date protection by inoculation.

Venereal Diseases

Considering the relative lack of opportunity the number of cases of VD was considerable. In one week thirty cases were admitted to 15 Indian Casualty Clearing Station. The Casualty Clearing Station had seldom less than seventy beds occupied by Venereal Disease cases. Venereal sores were more common than gonorrhoea.

The Venereal Disease Department of 15 Indian Casualty Clearing Station was run very efficiently but it was felt that the lines of treatment did not always accord with those now accepted. Insufficient dosages of M and B 693 for example may have led to resistant cases and relapses. Absence of facilities for diagnosis of sores (absence of dark ground condensor) greatly hindered early diagnosis and prompt treatment.

Skin Diseases

Skin diseases accounted for a large number of cases (secondary to malaria as a cause of disability though not hospitalisation) at the medical inspection rooms. Parasitic infections were rare. Fungus infections of feet and boils were wide spread. Few skin cases came to hospital in time to have a rapid cure.

Deficiency Diseases

No malnutrition or deficiency diseases were apparent clinically. The difficulty in obtaining fresh food, however, interfered with the provision of a balanced diet.

Hygiene and Sanitation

The standard of sanitation was, on the whole, satisfactory and in some units very good. Few senior Commanding Officers failed to take interest in or to appreciate the importance of good sanitation but the same cannot be said of junior officers. The standard latrine system adopted by the 14th Indian Division before moving to Bengal was the deep trench with flyproof covers. This system in water-logged ground was impracticable. Attempts were made to construct deep trench latrines in artificially raised ground. In this case revetment was provided by using bamboos. It was found that fly larvæ climb up along these bamboos to the surface. The deep trench latrines with bamboos almost always bred flies unless the maggots were regularly destroyed by burning with rags soaked in paraffin. Several types of fly traps were tried out but none was very successful. In addition they were (like latrine lids and spray pumps) usually lost, broken or left behind when a unit moved. Another difficulty with the trench latrine was the use of their lids. The Indian Other Ranks objected to handling the lids of the latrine covers with the result that they were frequently left open in all Indian units. Any self closing device was invariably broken.

There was almost total absence of arrangement for ablution. Fortunately there was plenty of water in area which the men could use.

Shortage of containers in which chlorination could be done and inability to improvise was noticeable.

The Divisional Field Hygiene Section did a lot of useful work but it was felt that the war establishment then in force was not ideal. The main weakness appeared to be the paucity of Non-Commissioned Officers of requisite status to make their presence felt on visits to other units. The relatively large number of labourers and sweepers led the Commanders of neighbouring units to expect their unit sanitary work to be done for them and frequently gave rise to misunderstanding.

Evacuation of Casualties

The conditions and means of transport were far from ideal, necessitating frequent improvisation. Few and bad roads limited the use of motor ambulance cars. Almost every conceivable form of transport was used for patients—Bearer Company, Pioneers as bearers (who did good

work), coolies, river boats, river steamers, coastal steamers, motor ambulance car, ordinary mechanical transport, mechanical transport berridge equipped, 15-cwt GS trucks with stretchers fitted, passenger train, ambulance train and air.

The importance of medical attention *en route* was not always appreciated. The night journey by river boat, which was unavoidable at one stage of the operations was very trying, and insufficient effort was made to provide hot tea, biscuits and plenty of blankets which would have made a considerable difference.

The handling of large numbers of sick was very valuable experience and certainly helped to prepare for the battle casualties which were to arrive later.

The importance of a clear cut system of reception of patients on arrival in a medical unit was not always fully appreciated. Detailed drill for collecting patients' equipment, rifles, etc. and subsequent disposal of these articles required attention.

The Medical Stores

The medical stores situation led to anxiety at times. Sulpha drugs had to be used sparingly and Sulphaguanidine was unheard of. It was found hard by units to indent for enough. Poor, over-loaded communications between stores depot and units meant long delays and general uncertainty.

Personnel

There was no deficiency in medical personnel except Assistant Surgeons (both British Troops and Indian Troops). Many officers and other ranks were almost completely untrained in the beginning but the heavy sick rate gave ample scope for training before the battle casualties started coming in.

Training

Apart from treating and evacuating sick there was not much opportunity for training. One field ambulance which had remained static in a very bad area throughout the rain was brought out for a month's intensive training which proved very successful. There was practically no opportunity for training with brigades.

General Remarks

On the whole the medical services of the 14th Indian Division put up a creditable performance during the monsoon of 1942. There were difficulties some of them very serious but they were generally overcome with a greater or lesser degree of success.*

*W Ds 14 Indian Division (January 1942-May 1943)
Notes by Lieut-Col Wilson IMS on ARAKAN

APPENDIX XI

Notification to Headmen of Villages

To the Headman of.....Village

Greetings, I, the Commander of British and Burmese forces fighting to defend Burma against the Japanese intrusion, and to restore health, happiness and freedom to the inhabitants, leave with you these soldiers, wounded in the defence of your country. I know that you will treat them kindly and nurse them back to health finally delivering them safely to the British Government. To assist you to do this, I have given you money and presents.

The names of these men and the name of your village and your own name, I have informed the British Government and to the American Government by wireless. They will send soldiers to enquire after them. You must be able to give a good account of them when the soldiers arrive. Should any bad men in your village or neighbourhood either ill-treat our wounded or betray them to the enemy, Beware. I shall hear of it and I shall send upon you punishment from our mighty Air Forces and you will be destroyed. But if you keep away such bad men and preserve the lives of our wounded then we will liberally reward you.

Do not be afraid, we have come to help you and not to hurt you. If these men die in spite of your kindness, you will bury them near the village keeping their property for us on our return, as a sign that you have treated them well. All will not die, one at least will live, and he will give evidence on your behalf.

If you will produce this letter to the Commanders of British forces, and prove that you have done what we have told you, they will reward you.

Signed.....

APPENDIX XII

Organisation of a Column

British Units	BOs	VCOs	BORs	BAORs	IORs GORs
Column Headquarters ..	1 (Maj) 1 (Sub)	..	4	..	2
RAF Section ..	1 (F/Lt)	..	4	..	..
Medical ..	1	..	2	..	2
Regimental Signallers ..	..	..	3	..	3
RC of S Dett ..	..	..	5	..	..
Sabotage Group ..	1	..	18	..	10
Burma Rifle Platoon ..	2	2	..	41	..
Infantry Company ..	5	..	110	..	..
Support Group ..	1	..	30	..	..
2nd line Transport ..	1	1	..	..	55
Total ..	14	3	176	41	72=306

Gurkha Columns

Column Headquarters ..	1 (Maj) 1 (Sub)	..	..	..	6
RAF Section ..	1 (F/Lt)	..	4	..	..
Medical ..	1	..	..	..	4
Regimental Signallers ..	..	..	3	..	3
RC of S Dett ..	..	..	5	..	2
Sabotage Group ..	1	..	18	..	10
Burma Rifle Platoon ..	2	2	..	41	..
Infantry Company ..	2	4	..	..	160
Support Group ..	..	1	..	..	40
2nd line Transport ..	1	1	..	..	55
Total ..	10	8	30	41	280=369

Note: The higher figure for the Gurkha Columns was due to the fact that they took their first reinforcements into the Field with them. No first reinforcements for the British Columns. Followers were taken into the field at Column Commanders discretion.

MULE AND WEAPON TABLE

Unit	Weapons	1st line Mules	2nd line Mules
Column Headquarters ..	..	1	1
RAF Dett ..	..	3	1
Medical ..	..	2	..
Regimental Signallers ..	..	3	..
Sabotage Group ..	..	10	3
Burma Rifle Platoon ..	..	..	4
Infantry Company ..	4 (Boyes Rif)	4	.
	9 (LMGs)	9	12
Support Group ..	2 (3" Mortar)	8	3
	2 (VMGs)	6	
2nd line Transport .	2 (AA LMGs)	2	23*
Total ..		51	49=100

*Note: Includes reserve ammunition for all small arms, baggage for muleteers. Fifteen Horses were also allowed to each Column.

APPENDIX XIII

Contents of Panniers

Quinine dihydrochloride tablets	..	..	4,000	
Quinine for injection	..	..	6	boxes
Atebrin	..	..	1,000	
Plasmoquin	..	..	860	
Iron and Quinine tabs	..	..	300	
Mag Sulph 60 gr tabs	..	..	2	tins
Castor Oil	..	..	2	tins
M and B 693	..	..	500	
Tab Sulphonamide	..	..	2,000	
Pulv Sulphonamide	..	..	1	lb
Sulphaguanidine	..	..	1,000	
Emetine Gr T	..	..	2	boxes
Vaseline	..	..	20	boxes
Ung Sulphur	..	..	1	lb
Tinc Iodine	..	..	1	lb
Aspirin	..	..	1,000	
Pill Scillae	..	..	150	
Chlorodyne	..	..	4	ozs
Ethyl Chloride	..	..	2	tubes
Tab Veg Lax	..	..	200	
Tab Bis C Sod	..	..	200	
Sod Bi-Carb	..	..	8	ozs
Ung Zinc	..	..	4	ozs
Intravenous Glucose and Saline	..	..	10	ampoules
Multi-vitamin Tabs.	..	..	9	boxes
Emergency ration	..	..	5	bottles
Novotox	..	..	2	ozs
Planocaine, tubes of 20	..	..	5	tubes
Tabs normal saline	..	..	4	tubes
Dextrosol	..	..	1	lb
Zinc Oxide strapping 1"	..	..	3	
Zinc Oxide strapping 3"	..	..	4	
Rubber drainage	..	..	1	
Syringes 10 cc	..	..	1	
Syringes 5 cc	..	..	1	
Syringes 2 cc	..	..	2	
Rubber sheeting	..	..	1	
Needles for syringes	..	..	10	assorted
Cat Gut No 3	..	..	12	tubes
Cat Gut No 2	..	..	12	tubes
Cat Gut No 0	..	..	12	tubes
Silk worm gut	..	..	2	boxes
Saw light-weight	..	..	1	box
Probe long	..	..	1	
Ophthalmic case	..	..	1	
Thermometers	..	..	2	
Syringe wound with nozzle	..	..	1	
Coramine	..	..	5	ampoules
Anacardine	..	..	5	"
Wood containers of Tab quinine	..	..	3	

Glycerine	4	ozs
Pulv acid boric	8	ozs
Primus stove	1	
Wood containers, asprin	2	
Cotton wool 1 lb roll	1	
Cotton wool 2 lbs roll	10	
Cotton compressed	20	packets
Gauze compressed	20	"
Lint compressed	10	"
Bandages compressed 2½"	58	
Bandages triangular	10	
1 Case tablets with leather cover containing:—		
Pill Scillae	250	
Tab. Morph Gr ¼	6	tubes
Tab. aspirin	50	
Tab. Calomel	200	
Tab. Pamaquin	160	
Tab. Pot Permanganate	300	
Tab. quinine	30	
Tab. Sulphanilamide	30	
Tab. M and B 693	30	
Spoon, metal dessert	1	
Tab. Hydrag Perchlor	50	
Tourniquet	1	
Tourniquet rubber	1	
Eye shades	3	
Iodine	4	oz bottle
Stoveline 2 co amp.	12	
Pot Permanganate	1	bottle
Benzedrine	250	
Acriflavine Tab	300	
Plaster of Paris Cellone 4"	8	tins
Plaster of Paris Powder	4	tins
Morphia ¼ gr tabs	12	tubes
Morphia ½ gr tabs	1	tube
Morphia ½ gr amps	24	
Anti-gas gangrene serum	7	ampules
Anti-Tetanus serum	25	ampules
Methylated spirits tin of 8 oz	1	
Pentothal 0.5 gr ampoules	25	
Chloroform 1 oz amps	30	
Adrenalin 1,000	1	bottle
Lysol	1	tin
Tannic acid powder	6	ozs
Tannic acid jelly	3	tubes
1 Case instruments containing:—		
Forceps SW 5"	1	
Forceps Dissecting plain 5"	1	
Knife BP handle	1	
Needles hypodermic	2	
Knife blades for	6	
Scalpel 1½"	1	
Scissors shop 7"	1	
Pins safety assorted		
Thermometers	2	

Pins packet	..	..	1
Assorted tubes of tablets			
Forceps SW various sizes	..	..	8
Scissors dressing	..	..	1
Scissors various	..	..	2
Needles, suture various		..	2 packets
Intravenous set	..	..	1
Cannula metal	..	..	1
Lumbar Puncture needle		..	1

APPENDIX XIV
26th Indian Division

ORDER OF BATTLE

(Medical Units only)

Divisional Units

- 1 Indian Field Ambulance
- 6 British Field Ambulance
- 60 Indian Field Ambulance

Non-Divisional Units

- 1 Indian Bearer Unit
- 28 Indian Field Hygiene Section
- 35 Motor Ambulance Section
- 20 Motor Ambulance Section
- 15 Indian Casualty Clearing Station
- 16 Mobile X-ray Unit
- 6 Indian Mobile Surgical Unit
- 7 Indian Mobile Surgical Unit
- 63 Indian Field Ambulance (L of C)
- 44 Indian Staging Section (Combined)
- 50 Indian Staging Section (Combined)
- 11 Field Ambulance Troop
- 16 Field Ambulance Troop.

APPENDIX XV

Medical Detachment (Special War Establishment)

BRITISH BRIGADE

(i) Personnel

Detail	Advance Bde HQ	Air base (a)	Total British Bde Med Det (Special)
<i>RAMC</i>			
Senior Medical Officer (Major) ..	1	..	1
Major .. ..	..	1	1
Major, Captain, or Lieutenant ..	..	1(b)	1
Warrant Officer, Class II ..	..	1(d)	1
Sergeants	1	1(d)	2
Corporals	1	3(d)	4
Privates	6	16(c)(d)	22
Total, all ranks . . .	9	23	32

Attached

RASC

Corporal .. ..	..	1	1
Driver Mechanic .. ..	..	1	1
Drivers .. ..	..	6	6(c)
Total attached . . .	..	8	8
Total British Bde Med Det (Special) including attached	9	31	40

(ii) Distribution of other ranks by trades and duties

Warrant Officer, Class II . . .	..	1	1
Dispenser Sergeant .. ..	..	1	1
Nursing Orderlies—			
Sergeants	1	..	1
Corporals	1	1	2
Privates . . .	6	5	11
Corporal Clerk .. ..	..	1	1
Corporal Stores . . .	..	1	1
General Duties (Privates) ..	..	10	10
Hospital Cook (Private) ..	..	1	1
Total, ORs	8	21	29

(iii) *Transport*

Ambulance (c)

(iv) *Table of weapons and ammunition*

Weapons		Ammunition in rounds			
Detail	Number	On Man	Reserve		Total
			Scale	Amount	
Pistols ..	3	12	6	18	54
Machines carbines					
Sten ..	8	128	..	..	1024
Rifles ..	8	40	..	..	320

Notes: (a) Each Air Base will contain the personnel required for the packing of Medical Stores.

(b) The officer will also be available as reinforcement officer.

(c) Includes 2 lance corporals.

(d) Not armed

(e) Includes 1 Lance corporal.

1st Reinforcements (includes 1st reinforcements for medical personnel attached to the battalions)

Sergeant RAMC .. 1

Private RAMC .. 5

INDIAN BRIGADE(i) *Personnel*

Details	Advance Bde HQ	Air Base (a)	Total Indian Bde Med Det (Special)
<i>RAMC or IAMC</i>			
Senior Medical Officer (Major)	1	..	1
Major ..	..	1	1
Major, Captain or Lieut ..	..	1(b)	1
Total Officers ..	1	2	3

British

<i>RAMC</i>			
Warrant Officer, Cl II ..	..	1	1
Sergeants ..	1	1	2
Corporals ..	1	3	4
Privates ..	5	8(c)	13
Total, British ORs ..	7	13(d)	20

Indian

Detail	Advance Bde HQ	Air base (a)	Total Indian Bde Med Det (Special)
<i>IAMC</i>			
Nursing Section Sepoys .. ..	..	2	2
Ambulance Section Sepoys .. ..	..	6	6
Total, rank and file, (I) .. ..	..	8(d)	8(e)
Total all ranks	8	23	31

Non-Combatants (enrolled)

<i>IAMC—General Section</i>			
Cook hospital IT grade I .. ..	..	1	1
Water Carriers, grade II .. ..	..	2	2
Washerman, grade II .. ..	..	1	1
Sweepers, grade II .. ..	..	2	2
Total Non-combatants (enrolled) ..	.	6	6

Attached

<i>RIASC—Naik, MT</i> .. ..	..	1	1
Drivers, MT .. ..	..	9	9(f)
Total attached .. ..	..	10	10
Total, Indian Bde Med Det (special) including attached	8	33	41

(ii) Distribution of other ranks by trade and duties

<i>British</i>			
Warrant Officer, Class II .. ..	..	1	1
Dispenser Sergeant .. ..	..	1	1
Nursing Orderlies .. ..	..	
Sergeant	1	..	1
Corporals	1	1	2
Corporal Clerk .. ..	..	1	1
Privates	5	3	8
Corporal Stores .. ..	..	1	1
General Duties (Private) .. ..	..	4	4
Hospital Cook (Private) .. ..	..	1	1
<i>Indian</i>			
Nursing Orderlies .. ..	..	2	2
General Duty .. ..	..	6	6
	7	21	28

(iii) *Transport*
Ambulance

(iv) *Table of weapons and ammunition*

Weapons		Ammunition in rounds			
Detail	Number	On Man	Reserve		Total
			Scale	Amount	
Pistols ..	3	12	6	18	54
Machine Carb- ines, Sten .	7	128	..	..	896
Rifles ..	10	40	..	..	400

- Notes:* (a) Each Air Base will contain the personnel required for the packing of Medical Stores.
 (b) The officer will also be available as reinforcement officer.
 (c) Includes 1 Lance Corporal.
 (d) Not armed.
 (e) Includes 1 L/Naik.
 (f) Includes 1 L/Naik and two driver mechanics. The driver mechanics may be remustered as motor mechanics if qualified
 1st reinforcement (including reinforcements for medical personnel, attached to infantry battalion.

Serjeant RAMC . 1
 Privates RAMC . 3
 Sepoys IAMC .. 2

APPENDIX XVI

Haversack (Contents)

MEDICAL OFFICERS

Tabs Aspirin	Tabs	50
Tabs Acriflavine	Oz	20
Chlorodynum, BP 1835	Oz	1
Injection Morphinae (Tubunic amps) gr $\frac{1}{2}$	Amps	12
Luminal	Tabs	20
Pentothal Sodium, ampoule of 1 0 with 20 cc ampoule of sterile water	Amps	3
Pilula Colcynthis Composite BPC	No	12
Pilula Scillae	No	12
Pilula Plumbi cum Opi	No	12
Quinine, Dihydrochloride, gr, 6 with Sodii Chloridum gr 9/20 amp of 10 cc	Amps	3
Sulphaniladum BP	Oz	4
Tabella Sulphaguandini	Tabs	50
Tabella Sulphathiazole 0.5 G	Tabs	200
Case Ophthalmic complete	No	1
Tabella Acidi Acetylsalicylici gr 3 Phenacetini gr 2 Opii gr $\frac{1}{2}$	Tabs	50
Tabella Amphetamine Sulphatis 5 mgm	Tabs	200
Tabella Bismuthi et Sodii Bicarbonatis gr 10	Tabs	25
Tabella Mepacrine Hydrochloridi 0.1 G	Tabs	200
Tabella Pamaquini 0.01 G	Tabs	50
Tabella Quininae Dihydrochloridi gr 5	Tabs	100
Ung Hydrargyri Oxidi Flav, tune of 2 drs BPC	Tubes	2

Instruments

Catheters	No	1
Forceps, Spencer Wells	No	2
Forceps, dissecting	No	1
Knife BP	No	1
Knife BP blades for	Pkt	1
Syringe Hypodermic with 6 needles	No.	1
Stringe 10 cc with 6 needles	No	1
Needles suture (straigth and curved)	Pkt	1
Probe, Silver	No	1
Scissors (sharp one blade)	No	1
Thermometer, clinical	No	1
Spud, eye	No	1

Dressing, etc.

Elastoplast	Tin	1
Plaster, Adhesive	Tin	1
Bandage, compressed 2 $\frac{1}{2}$ in	No	20
Bandage, triangular (pkt of 2)	Pkt	4
Gauze, compressed	Pkt	6
Lint, compressed	Pkts	6
Cotton wool, compressed	Pkts	6

Pins, safety	..	..	..	..	Box	1
Catgut, size 3	..	..	..	..	Tube	1
Silkworm Gut	..	..	..	..	Tube	1
Linen Thread	..	..	..	..	Reel	1

ORDERLY

Tabs Aspirin	..	..	..	..	Tabs	50
Tabs Acriflavine	..	..	..	..	Tabs	20
Injection Morphinae (Tubunic amps)	..	..	..	..	Amps	6
Luminal	..	..	..	..	Tabs	10
Pilula Colcynthis Composita BPC	..	..	..	..	Tabs	12
Piluli Scillae	..	..	..	..	Tabs	20
Piluli Plumbi et Opii	..	..	..	..	Tabs	20
Sulphanilidum BP	..	..	..	..	Ozs	2
Phenacetina gr 2 Opii gr $\frac{1}{2}$	..	..	..	..	Tabs	20
Tabella Acidi Acetylsalicylici gr 3	..	..	..	..
Tabella Amphetamine Sulphatis 5 mgm	..	..	..	..	Tabs	60
Tabella Mepacrinae Hydrochloridi	..	..	..	..	Tabs	100
Tabella Sulphathiazole 0.5 G	..	..	..	..	Tabs	100
Acriflavine Jelly, tube of 2 oz approx	..	..	..	..	Tubes	4

Instruments

Scissors, Straight	..	..	..	No	11
Scissors, pointed (one blade only)	..	..	..	No	1
Forceps, Spencers Wells	..	..	..	No	2
Forceps, Dissecting	..	..	..	No	1
Thermometer, clinical	..	..	..	No	1

Dressing

Elastoplast	..	..	..	Tin	1
Plaster, adhesive	..	..	..	Tin	1
Bandages, compressed 2 $\frac{1}{2}$ in	..	..	..	No	12
Bandages, triangular (Pkt of 2)	..	..	..	Pkt	2
Gauze, compressed, pkt	..	..	..	Pkt	6
Lint, compressed	..	..	..	Pkt	2
Cotton Wool, compressed	..	..	..	Pkt	2
Dressings, first field	..	..	..	No	6

APPENDIX XVII

Summary of Report on health of Chindits

(Lieut-Colonel J. N. Morris R A M C)

Four hundred and one British cases were received in a General Hospital from the Special Force in 1944. These cases had been for three to five months in the jungle of Burma. It is uncertain how representative these patients were of Chindit casualties for cases diagnosed early as malaria were filtered off to Malaria Forward Treatment Units and seriously ill were presumably retained in forward medical units. The diseases and disorders (detailed below) for which they were treated however give some idea of the condition of a group of the Chindits at the end of the expedition.

BILL OF MORBIDITY IN 401 BRITISH CHINDITS

			Number of cases	Incidence, per cent of all patients
I.	Disturbances of Nutrition Loss of weight, 10 lb and more ..	..	171 (of 191 men)	90 (of the sample)
	Glossitis—diarrhoea .. ..	..	86	21
	Angular stomatitis .. ..	..	5	1.2
	Oedema of the legs .. ..	..	7	1.7
II.	Alimentary Infections .. ..	..	155	38
	Dysentery .. ..	..	80	20
	EH cysts .. ..	..	18	4.5
	Worms .. ..	..	43	10
	Flagellates .. ..	..	14	3.5
III.	Simple diarrhoea (without glossitis or evident infection) .. ..	..	35	8.7
III.	Infective hepatitis .. ..	..	87	22
IV.	Malaria .. ..	..	127	32
V.	Anaemia .. ..	..	108	27
VI.	Skin sepsis .. ..	..	217	54
VII.	Polyneuritis .. ..	..	14	3.5
VIII.	Scrub typhus .. ..	..	6	1.5
IX.	Weil's disease .. ..	..	3	0.7
X.	Psychoneurosis .. ..	..	3	0.7
XI.	Injuries (including enemy action) ..	..	21	5.2
XII.	Miscellaneous .. ..	..	40	10
Total ..			1,085	..

These men came from all parts of Britain, belonged to different formations and presented manifold disorders but they tended to conform to a clinical

pattern and the group spirit was strong amongst them. What we learnt to call 'the Chindit syndrome' soon emerged the frequent association of long hair and long dirty finger nails; superior intelligence morale and manners, fatigue and hunger, pallor and loss of weight, skin sepsis diarrhoea and malaria.

The detailed report was read at physician's conference ALFSEA February 1943 and was also published in the Royal Army Medical Corps Journal, September 1945 No 3 Vol. LXV pp 123-132

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and conscientious efforts of the Medical Services in alleviating suffering and keeping the troops fit are all described in this volume. A short account is also given of the medical arrangements in connection with the population movement following the Japanese invasion of Burma. In addition, to make the book more easily intelligible to the general reader, a fairly detailed account of the military operations has been given. This serves also to show the background against which the medical services had to function, and the problems they had to solve, often by ingenuity and improvisation.

There are numerous well-drawn maps and interesting illustrations, appendices and an index.